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ART STUDIES

MUSICAL ACTIVITY AS A BASIS FOR THE DEVELOPMENT OF COMMUNICATIVE QUALITIES OF THE PERSONALITY OF STUDENTS

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Abstract

This article examines the development of students' communicative skills through musical activities. The authors emphasize the role and place of music in the formation and development of fundamental personal skills such as communication. They analyze verbal and nonverbal forms of communication in the information field, the challenges of monitoring them, and the impact of students' musical activities on the emotional and psychological characteristics of their social interactions.

Keywords: musical activity, communication, students, music lessons, personality traits, listening to music, playing an instrument, emotional states.

The need to form communicative abilities and dialogue skills in the context of communication ("child - child") was first raised by N. M. Yuryeva [1], when organizing a joint activity (two children drawing a picture according to a model). Experimental studies of dialogical interactions of preschool children with each other in the context of joint activities showed the need to teach the child to build relationships.

Communicative competence (i.e., the ability to communicate) is considered as an ability that ensures the successful interaction of partners and the solution of communication tasks. This concept is defined as the ability to use language for pragmatic purposes, that is, it includes the processes of operating with the meanings of language signs - combining them according to certain rules and using them in communication, - it consists of linguistic and specifically communicative aspects.

A. M. Shakhnarovich [2] considered communicative competence as a general concept that includes language competence as a part of it. In his opinion, communicative competence includes the processes of working with the meanings of language signs - combining them according to certain rules and using them in communication (semantic, syntactic and pragmatic). The first two aspects constitute linguistic competence, linguistic competence is a special functional system, hierarchically organized, multi-component, consisting of elements and rules for their use. The «core» that combines and connects the components is the property of the elements to express some meaning in accordance with the rules, which is constantly developing.

Taking this into account, linguistic competence is the main component of communicative competence, which ensures its integrity and the formation of specific communicative skills. The difference between communicative competence (ability) and linguistic competence is the inclusion of pragmatic conditions in the semantic and syntactic structures of linguistic competence, which make speech acts successful, taking into account the correspondence and usefulness of the speaker, listener and context. V.V. Kazakovskaya [3] considers communicative competence as a functional system of abilities, and this system allows a person to effectively communicate in all types of communication, and is manifested in his speech acts. The author distinguishes two components of communicative competence: systemic-linguistic and specific communicative. By specific communicative competence we mean the presence of a model of speech acts in the speaker's mind and his ability to use them in dialogue and monologue.

According to K. Meng, who studied the communicative and verbal actions of older preschool children [4], it can be said that the language abilities of a child of this age are practically formed, however, the child can carry out purposeful collective actions (and related texts) only with the support of adults.

The results of the study show that there is a dialogic component in the structure of communicative competence. The framework of dialogic competence includes: knowledge of the structural scheme of a certain type of text, knowledge of the interactive nature of

communication, the ability to use the tools that implement it. In addition, for dialogic competence, the component of speaking skills is very important, which is speaking practice. So, by communicative dialogic skills we understand the skills associated with the use of language tools in real communication - in a dialogue.

According to A.G. Arushanova [5], as a child grows older, the share of verbal means of communication in communication with peers (compared to non-verbal means) increases compared to communication with adults. Starting from the age of three, the sphere of communication with peers becomes more verbal and encourages the use of speech rather than communication with adults. Around the age of six or seven, preschoolers' abilities for verbal communication increase sharply. By the age of six, communication with peers that is not based on a common visual situation becomes possible. A necessary condition for such communication is the establishment of eye-to-eye contact. According to M.A. Stepanova [6], speech ability plays a leading role in the development of a plot-role game as a means of communication; in connection with its development, children's speech activity also increases: the higher the level of development of the plot-role game, the more often, more and in more diverse forms schoolchildren resort to speech means during the game. As the game activity develops, its speech functions and corresponding forms change.

M.A. Stepanova's research materials showed that the forms and functions of speech skills can be developed not directly through the manner of speech, but indirectly - through play.

In the study of T.A. Repina [7], the dynamic nature of peer relations in the context of children's unsupervised activities within a group (primarily, play) is considered, communication is defined as a communicative activity, a process of establishing face-to-face contact. This communication is aimed not only at effectively solving the tasks of joint activity, but also at establishing personal relationships and getting to know another person.

The development of speech skills goes hand in hand with cognitive abilities. The enrichment of vocabulary, the improvement of word order occurs in each activity of the child (subject, artistic, movement, musical, compositional, and others), since these types of activity depend on speech. The integration of communicative, cognitive, aesthetic, and social development is realized when planning psychological and pedagogical work, when coordinating the tasks of students in parallel. The place of musical activity in this process is special.

In modern schools, a wide musical and aesthetic space is created, and students are involved in music not only through school, but also through additional educational institutions, through systematic and close monitoring of in-class, out-of-class and out-of-school forms of musical training. «Music is one of the most important means of educating each person», writes D.D. Shostakovich [8]. Music contributes to the well-being of society, contributes to the ethical process of social life. If people have highly developed emotional sides, then in difficult situations it allows them to turn to their inner wisdom and find appropriate solutions. A person's perception of the world depends not only on the properties of the perceived object, but also on the psychological characteristics of the perceiver, his life experience, temperament, and state of mind at a given moment. And music, as one of the forms of reflecting reality, as well as one of the vital processes, is closely connected with the emotional sphere of a person.

The importance of musical education for the development of children, their emotional maturity, the formation of musical culture, artistic and creative outlooks on life, and the ability to build relationships within a team is considered in the works of D.B. Kabalevsky [9], B.M. Teplov [10], V.N. Shatskaya [11]. In this regard, T.V. Chelysheva, the author of the «Music» program, expressed the following opinion: the vitality of music is due to the need to accustom younger schoolchildren to musical art and is aimed at the following goals: personal, cognitive, communicative, social and aesthetic development of schoolchildren. Further, regarding communicative goals, he writes: «The communicative development of schoolchildren determines the following: the ability to listen, respect the opinions of other people; the ability to support the position of another person; readiness to conduct a dialogue; participation in the discussion of life and art phenomena that are important to a person; productive cooperation with peers and adults» [12], that is, all the characteristics of an individual that form the basis of his or her personality.

In the pedagogy of musical education, the problems of forming children's personal qualities through aesthetic education were addressed by L.V. Moiseeva [13], L.G. Dmitrieva [14], N.M. Chernoivanenko [15], O.A. Apraksina [16], T.A. Kolysheva [17], R.A. Telcharova [18], N.V. Sokolova [19], N.A. Vetlugina [20] and others.

If we review the sources of musical education and educational literature, they indicate that there are two more types of communication that convey information that form the basis of communicative relationships during musical activity.

In order to make the learning process more effective as a condition for the development of personal qualities, it is necessary to study the patterns of musical education in class and out of class. In this regard, it would be appropriate to study the following:

- Features of the child's perception of music and its (perception) impact on the emotional state;
- The need to express one's feelings or share emotional impressions (or feelings) with other children (motivational factor);
- Ways in which the child expresses his/her feelings and aesthetic impressions;
- Selection of appropriate word combinations;
- Forms, style and manner of communication (question-answer, game, dialogue, monologue, etc.);
- Achieving the necessary (emotional-cognitive) communicative contact (contact);
- Development of cognitive and spiritual-moral qualities of the child's personality.

When solving the first task, the teacher should take into account the following - the child's specific perception of music depends on the characteristics of his age-specific psychological development. Here, one should not immediately rely on the teacher's own taste and extensive experience, because in some cases they may not «work».

Therefore, it is necessary to assess the psycho-emotional status of children in a specific situation, and not "generalized" children. In music lessons, communicative relationships between students usually arise quickly. Usually, children happily share their impressions of what they see, hear, and perceive.

In order for this process to proceed smoothly, the teacher should carefully select educational material that implements a certain type of musical activity: listening to music, singing, playing stringed instruments, musical-didactic games, etc., as well as a pedagogical repertoire that is accessible to students and appropriate for the type of activity.

It should be noted that all of the above types of musical activity affect the emotional state of children, and this, to a large extent, depends on the child's perception of music. For example, if we take two relatively different types of activity, then in this case the situational factor will play a decisive role in perception. (for example, listening to music and musical-didactic game).

Children's attention will be directed to the perception of the music itself when listening to music rather than to musical-didactic games, and during the game, their attention will be directed not to the music, but to the procedural side of the game. Therefore, the teacher must be able to clearly distinguish the goals of using different types of activities.

Listening to music. The teacher selects a suitable piece of music to be listened to. It should be emotional, perhaps in content or program. Then, the teacher may give preliminary instructions so that the children perceive and react in a certain way.

Singing. Playing stringed instruments. The choice of each repertoire depends on the children's vocal capabilities and skills. The tessitura, range of the work should be narrow, and the work itself should be rhythmic, based on harmony, and modest in size. The form and genre should be suitable for children to perceive (song, march, etc.).

The second task: to encourage children to express and share their feelings with other children, not to leave them alone. This is a «motivating factor», which is determined and directed by the teacher himself, in order to form in the child, the need for self-expression. Why is this important? Because not all children react to what is perceived in the same way - in each class there are certain «activists» who are leaders, and there are also children who «keep quiet». Therefore, the task of the teacher is to «bring out» such children in the most transparent way and support them in expressing their opinions. In this case, it would be appropriate for the teacher to ask leading questions, give praise, and pay attention to some of the child's personal qualities (Table No. 1):

Table No. 1.

Tasks for the formation of communicative personal qualities of students in music lessons

1	*Conditions for the formation of*	*Conditions for the formation of students' communicative personality qualities during music lessons*	*Types of musical activities*	
	students' communicative personality qualities during music lessons		Conditions for the formation of students' communicative personality qualities during music lessons	
			Conditions for the formation of students' communicative personality qualities during music lessons	*Singing. Playing a musical instrument.*
2	Peculiarities of a child's perception of music and its impact on the emotional state		The teacher selects an appropriate piece to be listened to. It should be emotional, perhaps in terms of content or program. Then, the teacher may give preliminary instructions so that the children perceive and react in a certain way.	The choice of each repertoire depends on the children's vocal abilities and skills. The tessitura and range of the work should be narrow, and the work itself should be rhythmic, based on melody and harmony, and small in size.
3	The need to express their feelings or share their emotional impressions (or feelings) with other children (the striving factor)		Children should not remain passive and inactive, but should express their feelings or share their emotional impressions with other children. This «motivating factor» is determined and directed by the teacher himself,	The teacher's task is to «bring out» such children in the most accessible way and support them in expressing their opinions. It is necessary to ask leading questions, give praise, and pay attention to some of the child's personal qualities.

	The ways in which the child expresses his feelings and aesthetic impressions		in order to form in the child the need for self-expression.	
4	Choose appropriate word combinations		Touching and alluding to relevant images and associations.	-
5	Communication forms, style and manner		question and answer, game, dialogue, monologue, etc.	Draw children's attention to the intonation, rhythmic features, etc. of music.
6	Achieving the necessary (emotional-cognitive) communicative connection (contact)		Actively discuss what was heard and received with other team members	Actively participate in joint performance rehearsals (singing and playing).
7	Development of the cognitive and spiritual and moral qualities of the child's personality		To convey "personal experience" (emotional state) to other children, comparisons, metaphors, epithets, etc.	Listening to the sounds of nature (songs of birds, animals, fairy-tale characters, etc.)

The next step in solving the problem of communicative personality traits of students in music lessons will be our third task, and the implementation of aspirational needs. It consists, so to speak, of three main parts: a/ the child's ways of expressing his feelings and aesthetic impressions; and b/ the selection of appropriate phrases and expressions; c/ forms of communication, style and manner (question-answer, game, dialogue, monologue, etc.)

In fact, as we have already said, when a child expresses his feelings and aesthetic impressions, he can do so in two different ways: verbal and non-verbal. The first (verbal) form, since it is based on language, cannot be considered dominant. Non-verbal communication can be one of the most expressive and expressive forms of expression, especially if children are less active - this observation is quite reasonable. More precisely, at first this form of communication is more convenient and acceptable for them, and later it can also turn into a form of speech.

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BIOLOGICAL SCIENCES

INFESTATION OF *MALUS SIEVERSII* BY YPONOMEUTA MALINELLA ZELL. IN KAZAKHSTAN

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Abstract

The article presents data on the results of a study on the harmfulness and spread of the apple ermine moth in the territory of the Ile-Alatau and Zhongar-Alatau State National Parks. It is worth noting the need to study the distribution and influence of the apple ermine moth Yponomeuta malinella Zell., since this species causes significant harm to the Sievers apple tree in these territories. The main purpose of the study is to identify the degree of damage to the apple ermine moth Yponomeuta malinella Zell. to apply a timely control measure against this pest of the Sievers apple tree. As a result of the study, maps of distribution and influence were compiled, and a harmfulness map was also prepared in these territories. Also, a comparative analysis of the Iley and Zhetysu Alatau was carried out on damage to the Sivers apple tree by the apple ermine moth in 2018 and 2019. In the harmfulness map of the apple ermine moth, it is observed that the Sivers apple tree in the Kotyrbulak forestry of the Talgar branch, the Topolevka forestry of the Sarkand branch, and the Lepsi forestry of the Lepsi branch is more affected by the apple ermine moth compared with wild populations of apple trees growing at other monitoring sites.

Keywords: insect pests, the apple ermine moth, Yponomeuta malinella Zell., Sievers apple tree, Zhetysu Alatau, Iley Alatau.

Introduction. The relevance of the study lies in the fact that over the past few decades, the range of this species has significantly decreased, due to government and economic needs, genetic and environmental pollution of wild populations, as well as the development of dangerous pests around the area.

In the Iley Alatau, wild apple forests are located on the territory of the Ile-Alatau State National Natural Park in the gorges of Issyk, Mikushino, Soldatsai, Talgar, Kotyrbulak, Bolshoe and Maloe Almatinskie, Aksai, Kaskelen, Turgen [1] in massifs of various sizes, small groups and individual trees. The largest apple tree arrays are located in the Belchabdar gorge, as well as in the dedicated A.D. Back in the 60s of the last century, Dzhangaliev created the breeding and genetic site "Kuznetsova Gap", with an area of about 200 hectares, located in the Taldy-Bulak tract of the Malovodnensky forestry of the Turgen branch of the National Park [2]. This site is the main one in terms of preserved areas in the Iley Alatau.

In the Zhetysu Alatau, the optimal growing area for the Sievers apple tree is the northern slopes at an altitude of 1200-1500 m above sea level, and the southern slopes – 1200-1600 m. Back in the 60s, in the Zhetysu Alatau, A.D. Dzhangaliev allocated 6 seed plots of wild apple trees, Fir and Soldier gaps, Mushabai, Kok-Jet I, Kok-Jet II, Cherny Klyuch I, Cherny Klyuch II, Chernova Rechka, in order to obtain seeds, select and preserve mother trees [3].

According to experts, the situation is already close to critical, as the unique intraspecific diversity of Kazakhstan's wild apple tree populations is currently intensively decreasing, which leads to a decrease in the value of its gene pool [4]. It is already difficult to restore these resources naturally, since in many local populations there is practically no natural renewal of apple trees. In addition, the proximity of cultivated apple orchards directly adjacent to wild populations of fruit forests is a serious problem. The buffer protection zone along natural populations is often not maintained. In addition to alien plant species, insect pests and diseases of wild apple trees and other wild fruit plant species pose a threat to wild fruit forests [5, 6].

Early seasonal defoliation of trees is especially difficult for the body of fruit trees, as a result of which the radial growth of trees can significantly decrease within a few years after an outbreak of insect pests [7, 8]. Such a decrease in tree growth contributes to the settlement of pathogenic fungi, bacteria and insect pests on it, which in turn may be the cause further drying of the trees.

It is worth noting the need to study the distribution and influence of the ermine moth Yponomeuta malinella Zell., as this species causes significant damage to the Sievers apple tree in these territories [9, 11].

In nature, there are a huge number of different harmful insects that destroy fruits and leaves of fruit and berry crops. One of the main and permanent pests of Kazakhstan. The mountainous apple forests of Kazakhstan are permanent breeding grounds and dispersal of the apple ermine moth [12-15]. It should be noted that in 1958 there was an outbreak of mass reproduction of moths in Western Kazakhstan. In 2016, there was a noticeable increase in the number and damage of the monophage, the apple moth (*Yponomeuta malinella* Zell.), as well as the bird cherry moth (*Yponomeuta evonymella* L.) [16].

Materials and methods of research. The detection of the extent of the spread of harmful organisms was carried out by route examination and mowing of the crown of trees with an entomological net at monitoring sites. Mowing was carried out on 10 trees of each site.

When accounting for pests, they followed generally accepted methods in entomology. Thus, leaf damage by leafworts (hawthorn and roseate leafworts) on 10 model trees, taking into account the degree of damage: 1 – weak, 2 – medium, 3 – severe degree of damage. The damage to the leaves of the apple moth was also determined on 10 model trees on a five–point scale: 0 – no damage, 1 – damaged leaves on single branches, 2 - leaves on trees damaged by 10-25%, 3 – leaves on trees damaged by 50-75%, 4 – leaves on trees damaged completely.

The main research object was *Yponomeuta malinella* Zell. - apple ermine moth. First of all, the leaves of apple trees inhabited by pests at different stages of development were examined: caterpillars of different ages, pupae and imago [17, 18]. Various definitional tables were used to identify the species, which are widely available in the scientific literature [19, 20]. All the collected insects were studied in detail under binoculars and photographed.

The results and discussion. The results show that the apple ermine moth has a high abundance in the Kotyrbulak, Topolevsky, and Lepsinsky forest areas. As a result of the research, it turned out that the occurrence of the apple ermine moth (*Y. malinella* Zell.) in the Zhetysu Alatau is higher than in the gorges of the Iley Alatau. Damage to the Sievers apple tree by the ermine moth is shown in Table 1 and Figure 1,2.

Table 1

Damage to the Sievers apple tree by the ermine moth in the Iley and Zhetysu Alatau in 2023, 2024

The coordinate	Geographical location	Years, %	
		2023	2024
Iley Alatau			
E-76º47'58" N-43º7'23"	The Aksai branch, the Aksai forestry	38	37,5
E-77º21'16" N-43º16'5"	The Talgar branch, the Talgar forestry	25	24,5
E-77º29'05" N-43º15'11"	The Turgen branch, the Issyk forestry	35	35,7
E - 77º40'21" N - 43º22'05"	The Turgen branch, the Kuznetsov gorge breeding-genetic reserve	58,5	60,6
E - 77º06'57" N - 43º16'39"	The Talgar branch, the Kotyrbulak forestry	38,3	41
Zhetysu Alatau			
E – 80º55'076" N– 45º47'028"	The Lepsi branch, Lepsi forestry	40,4	43,3
E – 80º40'826" N– 45º39'258"	The Sarkand branch, Topolevka forestry	45,7	45,5

Table 1 shows the results of a survey of Sievers apple trees in the territory of the Iley and Zhetysu Alatau, the ermine moth damages the Sievers apple tree in the Zhetysu Alatau more than in the Iley Alatau, near the Turgen branch of the Kuznetsovo Gorge Genetic Reserve. For example, in 2023, at the monitoring sites of the Lepsi branch and the Sarkand branch, its harmfulness amounted to 40.4 and 45.7%, respectively, while in other branches of the Iley Alatau it varied between 28-38.3%.

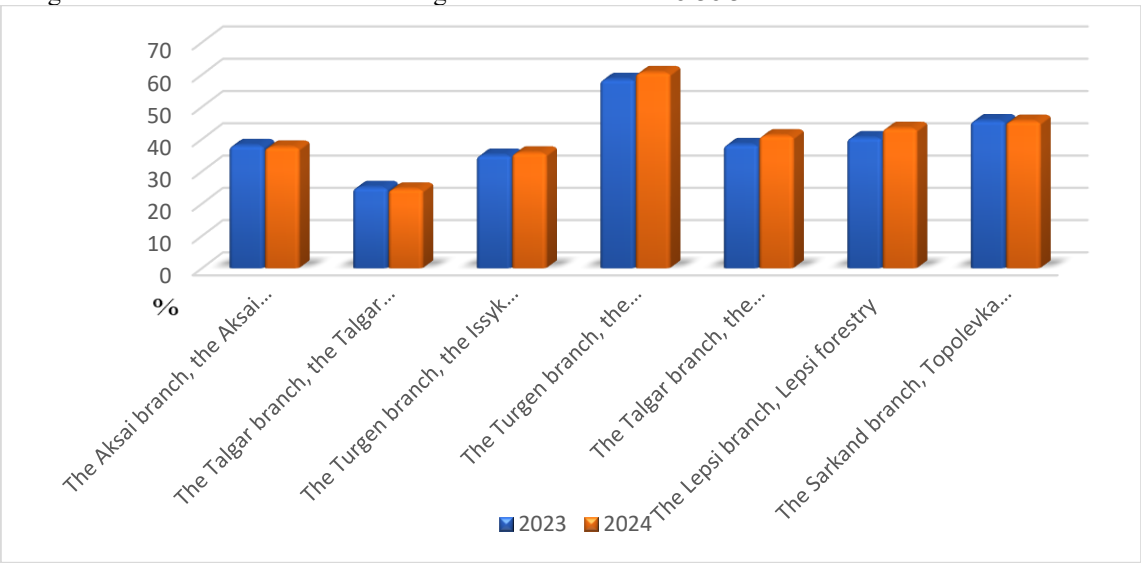

Figure 1 – Comparative analysis of the Iley and Zhetysu Alatau on damage to the Sievers apple tree by the apple ermine moth in 2023 and 2024

In Figure 1, you can see that the damage to trees in 2024 had similar results, but there are differences. For example, in the Turgen branch of the Kuznetsovo Gorge genetic reserve, in the Talgar branch of the Kotyrbulak forestry of the Iley Alatau, the Sarkand and Lepsi branches of the Zhetysu Alatau, the Sievers apple trees received greater damage from the apple ermine moth, because 2024 was much warmer than 2023. Dry and hot weather contributed to increased damage to apple ermine products. The author conducted research in 2018-2019, then in the Turgen branch of the Kuznetsovo Gorge Genetic Reserve, the harmfulness was 19.5% in 2018 and 20.6% in 2019. During the second study, it was found that the harmfulness increased dramatically. According to the results of the study, in 2023 the harmfulness will be 58.5%, in 2024 – 60.6%.

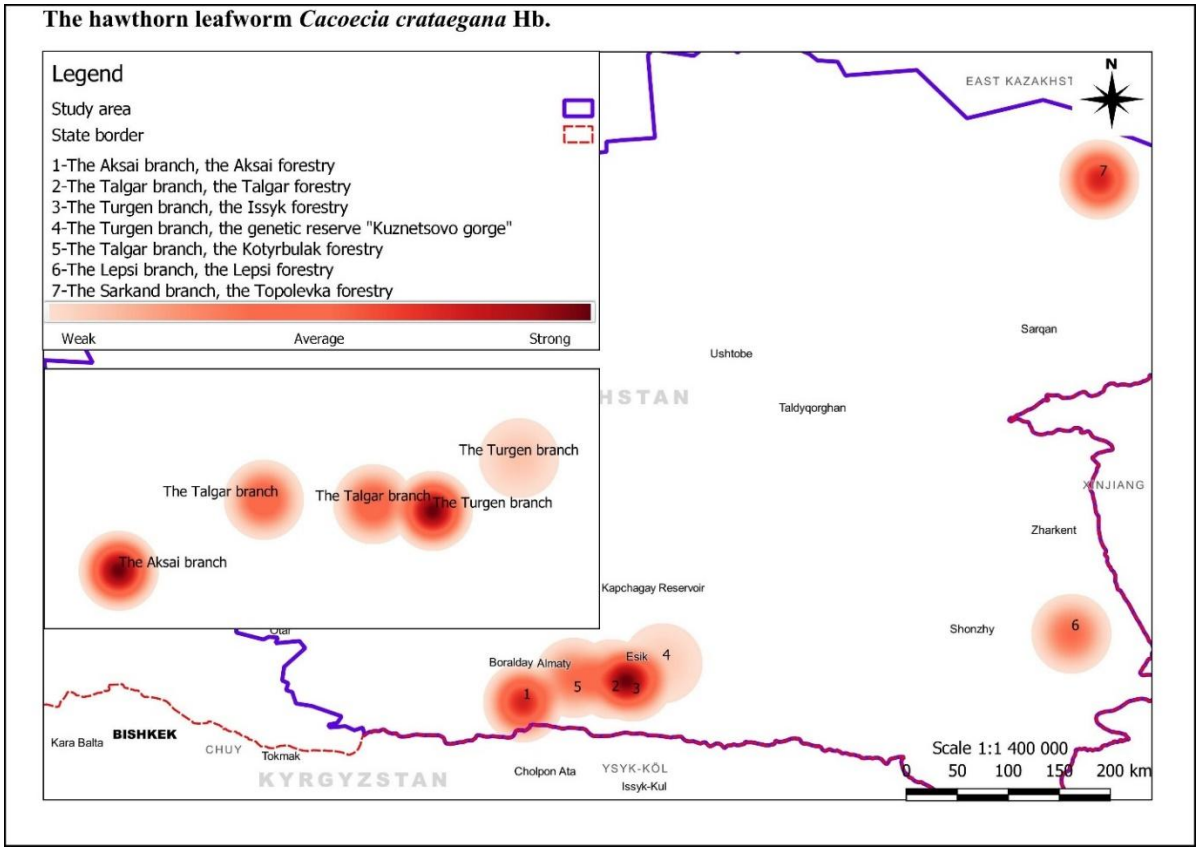

Figure 2 – Map-scheme of the harmfulness (damage distribution) of the apple ermine moth (Yponomeuta malinella Zell.)

In this map-scheme of the harmfulness of the apple ermine moth, it can be observed that *Malus sieversii* in the Kotyrbulak forestry of the Talgar branch, the Topolevsk forestry of the Sarkand branch, and the Lepsi forestry of the Lepsi branch is more heavily affected by the apple ermine moth compared with wild apple populations growing in the other monitoring plots.

Conclusion. During our field studies, the apple ermine moth (*Yponomeuta malinella* Zell.) was identified as the most dangerous species among insect pests, capable of mass reproduction and causing significant economic and ecological damage to wild apple stands. Studies were conducted to assess the degree of damage to leaf blades and trees of wild populations of *Malus sieversii* caused by the apple ermine moth in the territories of the Iley Alatau and the Zhetysu Alatau in Kazakhstan. The results showed that the level of infestation varied among different forest districts and monitoring plots, which is likely related to local ecological conditions, population density of the pest, and the condition of host plants. In some areas, mass outbreaks of the apple ermine moth led to significant defoliation of trees, weakening of plants, and a decrease in their regenerative potential.

As a result of the research, distribution maps and map-schemes of harmfulness were compiled for these territories, reflecting the spatial patterns of pest spread and the intensity of damage. A comparative analysis of the Iley Alatau and Zhetysu Alatau regions was also conducted regarding the damage to *Malus sieversii* caused by the apple ermine moth in 2023 and 2024, which revealed differences in the dynamics of pest populations between years. The obtained results highlight the importance of regular monitoring of insect pests in natural populations of *Malus sieversii*, as well as the development of scientifically based measures aimed at protecting this valuable genetic resource and conserving biodiversity in mountain ecosystems of Kazakhstan.

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THE INFLUENCE OF ABIOTIC FACTORS ON THE PHENOLOGY OF THE *CACOECIA CRATAEGANA* HB.

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Abstract

The article presents the results of a study on the bioecological development features of the hawthorn leafworm *Cacoecia crataegana* Hb. in the Ile-Alatau and Dzungar Alatau State National Parks. The main objective of the research was to identify the key factors influencing pest development, determine its phenological and environmental characteristics, and identify the most vulnerable stage of the hawthorn leafworm in order to implement timely and effective pest control measures. Particular attention was given to the role of abiotic factors, especially air temperature and humidity, which significantly affect the timing of developmental stages and the overall phenology of *Cacoecia crataegana* Hb. The study established the precise periods of occurrence of different developmental stages and determined the relationship between climatic conditions and insect activity. The results showed that temperature conditions largely regulate the rate of larval development and the onset of pupation and adult emergence, while air humidity influences survival and activity of larvae. Based on field observations conducted during the 2018–2019 seasons in the foothill zone of the Almaty region within the Ile-Alatau and Dzungar Alatau State National Parks, it was determined that the pest develops in one generation per year under these environmental conditions. Depending on weather factors, the duration of the most hazardous period of the pest ranged from 35 to 40 days. The obtained data made it possible to summarize the seasonal dynamics of hawthorn leafworm activity and compile a phenological calendar of its development. Accurate knowledge of phenological patterns and environmental parameters, particularly temperature and humidity, is essential for improving monitoring systems and ensuring timely and effective pest management strategies.

Keywords: *Cacoecia crataegana* Hb., the Sievers apple, the Zhetysu Alatau, the Iley Alatau, Kazakhstan, pests, insects.

Introduction

The Sievers apple tree is a relict species known since the Oligocene times, representing a Central Asian mountain type. The particular value of the species is that it is the custodian of the unique germplasm and the ancestor of many cultivars of apple trees [1, 2]. Natural plantations of the Sievers apple tree have no analogues in the world plant community [3]. They are currently recognized as having global world significance, as the world's only natural genetic basis for the maintenance and development of the apple culture [4, 5].

Relevance of the study lies in the fact that over the past few decades, the range of this species has significantly decreased, due to state and economic changes, genetic and environmental pollution of wild populations, as well as emergence of dangerous pests around the area.

The area of the Sievers apple tree in Kazakhstan covers the mountainous regions of the east, southeast and south of Kazakhstan, stretching from Tarbagatai to the Western Tien Shan. The main tracts of wild apple forests are found in Tarbagatai (an area of about 300 hectares), the Zhetysu Alatau (3800 ha), the Iley Alatau (1300 hectares) and in the Western Tien Shan [6]. In the Western Tien Shan, the apple tree is found mainly in small groves scattered in the gorges, occupying only one large massif of 50 hectares area, that is the grove "Kara-alma" in the Aksu river canyon located in the Aksu-Zhabagly reserve. Among the species of the genus *Malus* Mill., the Central Asian wild-growing Sievers apple tree has a great intraspecific diversity [7], a wide range of variability in biological characteristics, resistance to winter cold, drought and heat, and immunity to pests and diseases.

A.D. Dzhangaliev, researcher of wild apples in the Zhetysu and Iley Alatau in the mid-XX century, studied the Sievers apple tree within the Kazakhstan mountain system at the phytocenotic, species and population levels. His studies showed that local forests have high polymorphism and genetic duplication [8, 9].

According to experts, the situation is already alarming as the unique intraspecific diversity of Kazakhstani populations of wild apple is now rapidly decreasing, which reduces the value of its gene pool. It is already difficult to restore these resources in a natural way, since in many local populations there is practically no natural regeneration of the apple tree. In addition, the proximity of cultivated apple orchards directly adjacent to wild populations of fruit forests represent a serious challenge. The buffer zone along natural populations is often not observed. In addition, threats to wild fruit forests stem from alien plant species, insect pests and diseases of the wild apple and of other wild species of fruit plants [10].

Early seasonal defoliation of trees is especially difficult for the fruit tree organism, resulting in significant reduction of the radial growth of trees lasting several years upon the outbreak of number of the insect pests [11]. Such reduction in growth of the tree contributes to infecting it with pathogenic fungi, bacteria and insect pests, which in turn can cause further drying out of trees.

One of the main conditions for the plant anti-pest protection is the timeliness of various complex

measures based on use of phenological data [12]. Signalling and predicting the timing of pest emergence and development is a major and sophisticated task, needed by modern techniques for insect pest control. It is important to note that the family of leafworms (Tortricidae) from the order Lepidoptera occupies a special place among other insect pests [13, 14].

It is worth noting the need to study the phenology of the hawthorn leafworm *Cacoecia crataegana* Hb., since this representative of the family of leaf rollers causes significant harm to fruit and berry plants.

In the nature, there is a huge number of various harmful insects that destroy fruits and leaves of fruit and berry plants. Mountain apple forests of Kazakhstan are permanent centers of reproduction and areal of the hawthorn leafworm. Here is its brief description. Main coloration of fore wings is brownish-gray, in males with yellow pollen. The pattern is dark brown (distinct in males, with a clearly visible light border, blurred in females), it consists of an oblique root spot with a rounded apex, an obliquely positioned broad and inflated median band, tapering very sharply at the front of the wing (often the band does not reach the leading edge) and merged anteroposterior and outermost bands as a gradually tapering saber-like curved band. Hind wings are unicolored brownish-grey, in females with reddish patches at apex. Eggs pale yellow, slightly flattened cylinders with rounded apex, 0.7-0.8 cm high and 0.5 mm thick; in clutch they are arranged 20-90 eggs vertically to substrate in arched, single rows in oval, flat grayish-brown shields 0.2-0.5 cm in size. Overwintering, the shields turn white and resemble splashes of lime. Larva is 20-23 mm in length, dark gray or greenish black; head, thoracic legs, prothoracic and anal scutes and shields at the base of body spines are black, shiny. Abdominal legs (sclerotized externally) with triple crown of 52-72 claws, anal legs with 47-59 claws in triple medial horseshoe; pupa 13-16 mm, dark brown, slightly shining; cremaster as elongate, not flattened longitudinally wrinkled papillae, armed with eight hooked setae, of which four are located on its conical apex and two on each side.

Material and research methods

The study was carried out using methods of laboratory analyses, route and stationary surveys of the Sievers apple tree plantations located in the territory of the Iley-Alatau and Dzungar Alatau state national parks.

In Zhetysu Alatau, the optimal zone for growing Sievers apples corresponds to the altitude of 1,200-1,500 m above sea level on the northern slopes and 1,200-1,600 m on the southern slopes. In the Iley Alatau, the apple tree grows at an altitude of 900-1,500 m a.s.l. and 1,500-1,700 m a.s.l. on the southern slopes. Optimal conditions for growing wild apples in the Iley Alatau were observed on northern slopes at 1,300-1,600 m a.s.l. (figure 1).

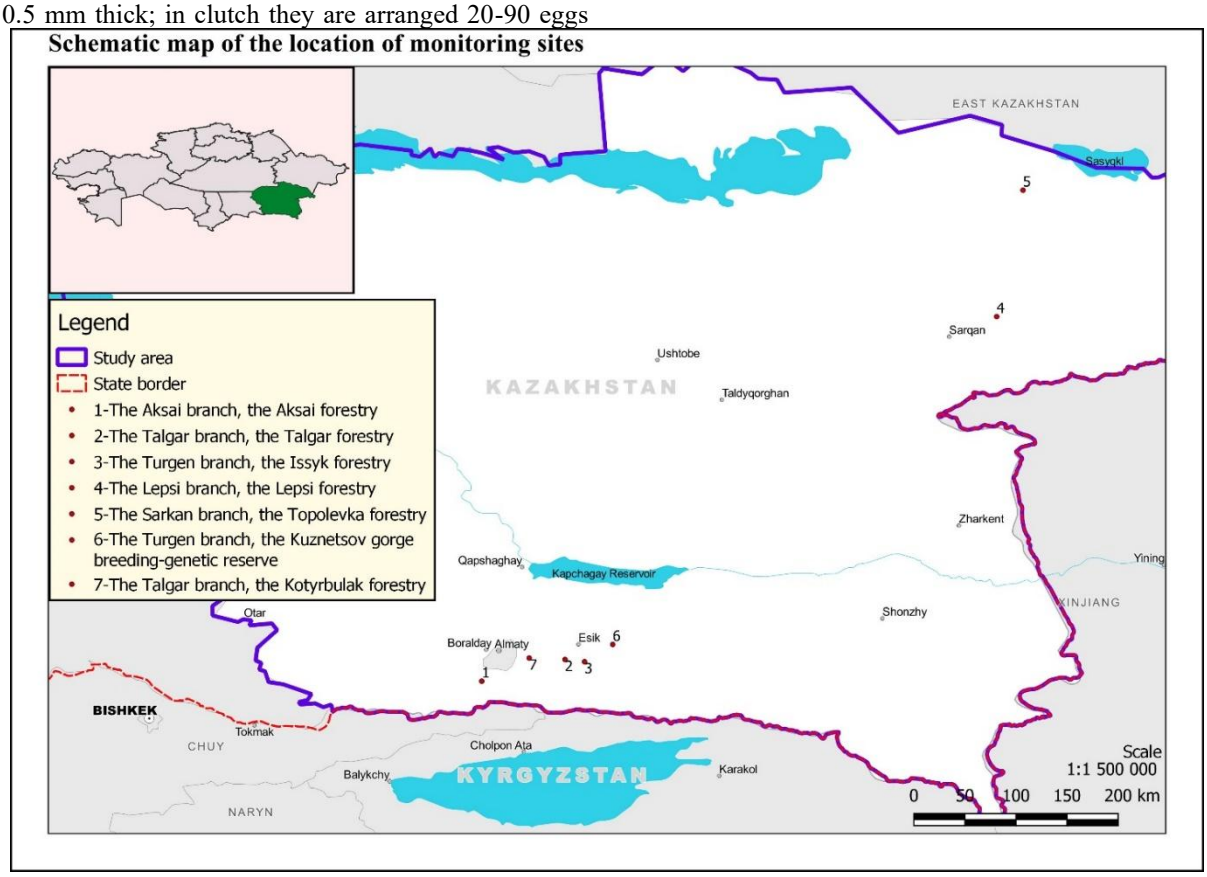

Fig. 1. – Schematic map of the location of monitoring sites

The research subjects were leaves infected by pests at different stages of development: larva of different ages, pupa, and adults.

The 2023-2024 studies were carried out in laboratory and in the fields.

To determine the species identity of pests, the following were used: identifiers of agricultural pests, pests and beneficial insects; methodological recommendations and guidelines [15].

During field observations and collecting, the butterflies and larva were placed in glass jars of 0.5l or glass test tubes; the leaves of the Sievers apple tree were also placed with larva, that ones where larva were residing. Separate test tubes also contained the leaves of the Sievers apple tree infected with larva. These boxes were noted with serial numbers, information about the place and time of collection, the plant, the nature of its damage and other data were registered in a log. Later, when molting and for keeping, the caterpillars were placed into separate test tubes.

In laboratory, tubes with rolled leaves were covered with gauze and labelled. The larva was kept and fed in test tubes, under gentle conditions of warmth, light and moisture, needed for normal development of the larvae. Especially, the containers with larva were kept under direct sun rays short time in order to avoid harmful sweating of the containers, their waterlogging and overheating.

To identify the species, samples of biological samples were inspected with binocular microscope and were photographed.

Research results and discussion

The prerequisite for successful protection against hawthorn leafworm is the onset of the vulnerable stages of development, which is the optimum time for treatment.

In order to determine the treatment timing, it is important to know the exact dates of the following stages in the pest's development:

the beginning of the mass flight of the moths;

the start of mass egg laying;

the beginning of mass hatching of larvae.

The larva emerge at the end of April - beginning of May, when the average temperature reaches 10°C. The larvae penetrate the buds, eat them up and then move on to blossoms and flowers [15]. The larvae of older plants fold the leaf along the central vein and bind it inside out, later on they bind together a few leaves so that they form a silkworm-containing pocket. The feeding period of the caterpillars lasts 35-40 days, or in 25 days under favourable temperature conditions. The larvae hatch in feeding places among the leaves. The puping takes 10-16 days at an average temperature of 16 to 19°C. Flight of butterflies is quite long, lasting from the end of May until the third decade of July. The females lay their eggs in the tree barks and branch forks. Development stage data on hawthorn leafworm, obtained in the laboratory conditions, are shown in Figure 2 and Table 1.

Fig. 2. – Various stages of the development of the hawthorn leafworm, obtained in the laboratory conditions (1 - an egg, 2 – larvae in leaf, 3 – larvae, 4, 5 - pupae, 6 – imago) (Photos: Gulzhanat Tanabekova)

Table 1.

Phenogram for the development of the hawthorn leafworm 2018-2019

April			May			June			July			August		
I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
0	0	Ω	Ω	Ω	Ω	Ω	□	+□	+0	+0	+0	+0	+0	0
		▲	▲	▲										

□ – pupae;
+ – imago;
0 – eggs laying;
Ω – hatching of larvae;
▲ – especially dangerous period.

Table 1 indicates a particularly dangerous period for the fodder plant - the stage of the mothers of 1-3 growth, which appear from the third decade of April to the first decade of June. According to our observations, the mass flight of butterflies is often observed after precipitation. Table 2 provides data on phenological observations of the hawthorn leafworm in the Iley and Zhetysu Alatau in 2018-2019.

Table 2.

Phenology of the hawthorn leafworm *Cacoecia crataegana* Hb. in 2018-2019

Development stages	Data		Night temperatures, T°C		Relative humidity, %	
	2018	2019	2018	2019	2018	2019
Beginning of hatching of the 1st larvae from overwintered eggs	27.04.	26.04.	10	11	76	73
Mass emergence of the 1st larvae and the start of active feeding	08.05.	11.05.	17	23	34	33
2nd larvae	12.05.	16.05.	18	17	53	49
3rd larvae	18.05.	21.05.	17	23	42	48
4th larvae	22.05.	26.05.	19	21	44	38
5th larvae	29.05.	03.06.	18	20	40	57
Beginning of pupation	01.06.	07.06.	19	22	51	45
Mass pupation	08.06.	12.06.	19	18	52	51
Beginning of the imago flight	11.06.	15.06.	20	20	60	57
Mass imago flight	27.06.	02.07.	25	26	39	37
Beginning of the egg laying	02.07.	09.07.	24	28	33	39
The mass egg laying	19.07.	27.07.	28	29	28	22
Beginning of diapause	03.08.	16.08.	23	24	44	40

The duration of various stages of development of the hawthorn leafworm in the Iley and Zhetysu Alatau according to observations in 2018-2019: full life cycle - 1 year (one generation), egg (embryo with wintering) - 280-300 days, caterpillars - 35-40 days, pupa - 10-16 days, imago - 30-60 days. Influence of temperature indicators and relative air humidity on the phenology of the hawthorn leafworm *Cacoecia crataegana* Hb. in 2018-2019, it is presented below in the form of a graph (Fig. 3-5).

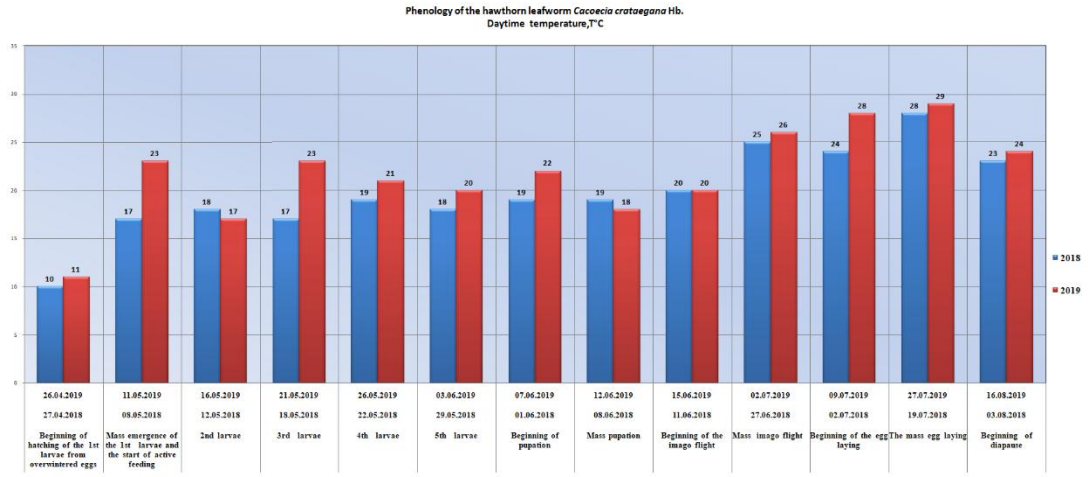

Figure 3 – Influence of temperature (° C) on the phenology of the hawthorn leafworm Cacoecia crataegana Hb. in 2018-2019

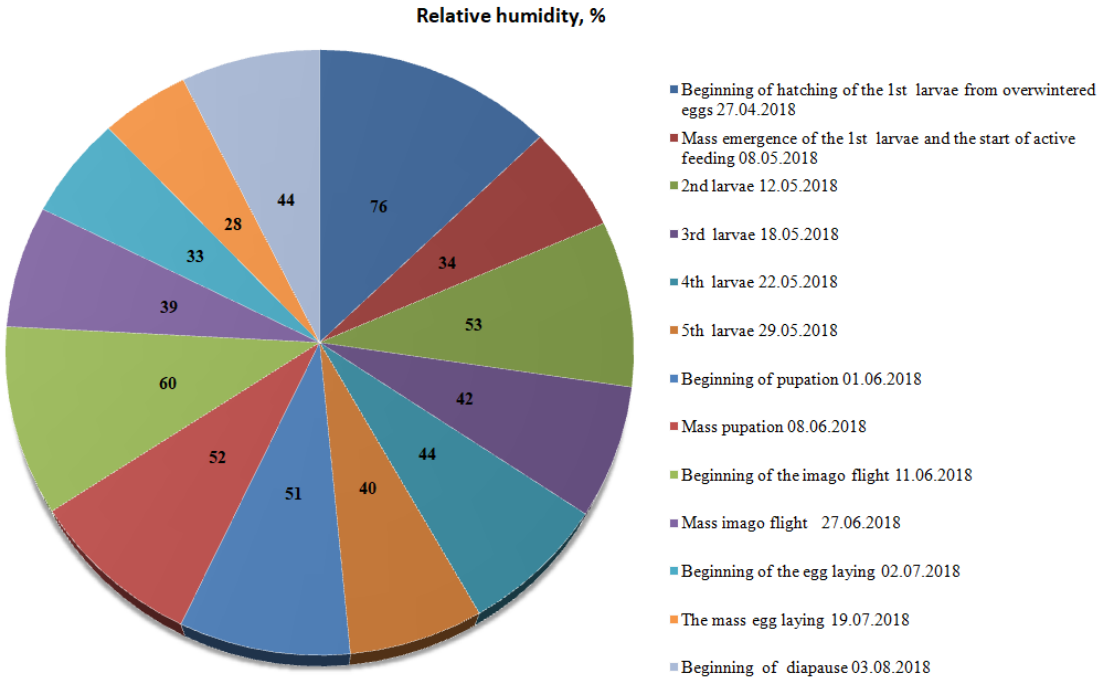

Figure 4 – Influence of the relative air humidity (%) on the development of the hawthorn leafworm Cacoecia crataegana Hb. in 2018

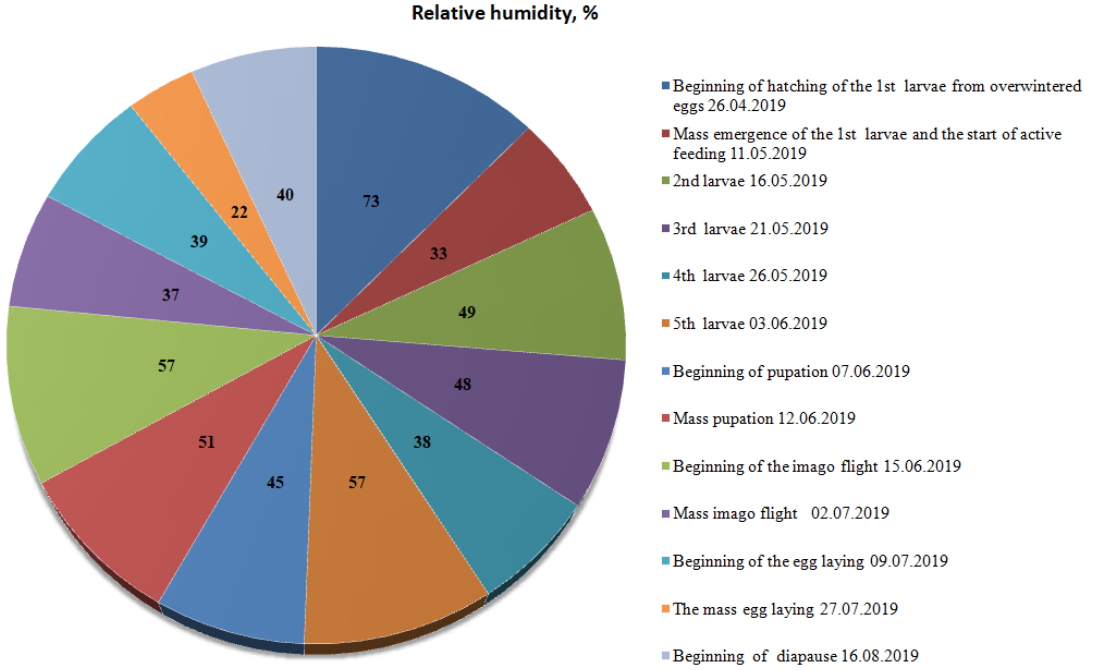

Figure 5 – Influence of the relative air humidity (%) on the development of the hawthorn leafworm Cacoecia crataegana Hb. in 2019

Conclusion

This type of pest affects all types of apple trees, and in some cases it can develop on pear tree. Affected trees become vulnerable to unfavorable environmental factors, which reduce the overall resistance, causing depletion of trees and decrease of fruit production in subsequent years. For effective control of the hawthorn leafworm, it is important to know its biological characteristics [17].

The research conducted in the period from 2018 to 2019 allowed to reveal that with termination of the winter stage the 1st generation larva start to come out at 10°C under conditions of middle mountains. Approximately 35-40 days later, they pass to the puping stage at an average daytime temperature of 18-28 °C. This stage of development lasts about 10-16 days. The mass puping takes place in the first decade of June at an average daytime temperature of 19-29 °C. The first imago appear in the second decade of June at a temperature of

20 °C. Mass flight of butterflies is observed every week at an average daytime temperature of 25-32 °C. Their life lasts from the beginning of June to the end of July. It was found out that the mass egg-laying occurs at the end of June. The hawthorn leafworm winters in eggs.

Remarkable is the resistance of the Sievers apple tree against diseases and pests, even though the Sievers apple tree in the Iley Alatau is damaged by 25%, in the Zhetysu Alatau by 18%, meaning that the Iley Alatau has suffered more damag by the hawthorn leafworm than the Zhetysu Alatau.

In order to combat the pest, accurate knowledge of phenological and ecological data is crucial to know. Establishment of modern phenological data is to be followed by mechanical, biological or chemical control measures.

This research has been is funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Nr. BR24993060) "Information system development for wild animals' cadastre maintaining of Western Tien Shan for the conservation and sustainable use purposes".

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CHEMISTRY SCIENCES

РАЗРАБОТКА БЕЗОПАСНЫХ АНТИПИРЕНОВ НА ОСНОВЕ ФОСФОРА И АЗОТА ДЛЯ КОНОПЛЯНЫХ УТЕПЛИТЕЛЕЙ С ИЗУЧЕНИЕМ СВОЙСТВ

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DEVELOPMENT OF SAFE PHOSPHORUS AND NITROGEN-BASED FLAME RETARDANTS FOR HEMP INSULATION MATERIALS AND STUDY OF THEIR PROPERTIES

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Аннотация

В современное время всё чаще наблюдается спрос на экологически безопасные материалы. Строительство зданий и помещений не обходят данную тенденцию стороной. Возникший спрос в материале из возобновляемых источников удовлетворяют дешевые материалы из природного волокна. Такие как конопля, лен и другие. Они не вредят окружающей среде и людям, и способны к естественному разложению. Но перечисленные материалы в исходном виде обладают существенным недостатком – горючесть.

Целью данного исследования заключается придание огнезащитных свойств конопляным материалам.

Но возникает ещё одна проблема – выбор правильного антипирена. Соответственно мы не можем применять антипирены на основе галогенов, которые используются в полимерной промышленности. Они весьма токсичны и рушат принципы экологической безопасности. Такие материалы плохо разлагаются, выделяют токсичные вещества при высоких температурах.

Задачей данного исследования является разработка безопасного антипирена на основе фосфора и азота.

Основой для проведения эксперимента послужил теплоизоляционный материал из конопли «РосЭкоМат Кенаф 1200х600х30 мм». В качестве реагентов для создания антипирена послужили дигидрофосфат натрия и мочевина. Данные вещества встречаются в природе и безопасны как для неё, так и для человека. Закрепляющим агентом послужило натриевое жидкое стекло.

Abstract

In modern times, there is an increasing demand for environmentally friendly materials. The construction of buildings and premises does not ignore this trend. The emerging demand for renewable materials is being met by

cheap natural fiber materials. Such as hemp, flax and others. They do not harm the environment and people, and are capable of natural decomposition. But the listed materials in their original form have a significant disadvantage – flammability.

The purpose of this research is to impart fire-resistant properties to hemp materials.

But there is another problem – choosing the right flame retardant. Accordingly, we cannot use halogen-based flame retardants, which are used in the polymer industry. They are highly toxic and violate the principles of environmental safety. These materials do not decompose well and release toxic substances at high temperatures.

The objective of this research is to develop a safe flame retardant based on phosphorus and nitrogen.

The experiment was based on the «RosEcoMat Kenaf 1200x600x30 mm» hemp thermal insulation material. Sodium dihydrogen phosphate and urea were used as reagents for creating the flame retardant. These substances are found in nature and are safe for both nature and humans. Sodium liquid glass was used as a binding agent.

Ключевые слова: Утеплитель из конопли; огнезащитные свойства; экологически безопасные антипирены; антипирены на основе фосфора и азота.

Keywords: Hemp insulation; fire-resistant properties; anti-fire properties; environmentally safe flame retardants; phosphorus and nitrogen-based flame retardant.

1. Введение:

Конопляные утеплители и материалы на основе натуральных волокон обладают отличными теплоизоляционными характеристиками и экологичны, однако их высокая гигроскопичность и пожароопасность ограничивают их применение в строительстве [1-9]. Для решения проблемы огнестойкости активно разрабатываются антипирены, в том числе фосфорно-азотные, которые эффективно снижают воспламеняемость и замедляют термическое разложение материала [10-26]. Эти антипирены действуют за счёт синергизма фосфора и азота, образуя химические связи, которые повышают термостойкость и огнеупорность материалов [27-30]. Фосфорные соединения образуют на поверхности материала защитную плёнку, предотвращающую распространение огня, в то время как азот действует как ингибитор, замедляя химические реакции, ведущие к воспламенению [31]. Разработка таких антипиренов позволяет значительно повысить термостойкость и механическую прочность утеплителей, а также обеспечить их долговечность в условиях высоких температур. В сочетании с жидким стеклом эти антипирены делают конопляные и другие натуральные утеплители не только огнестойкими, но и экологически безопасными, открывая новые перспективы для их использования в строительстве [32-33].

2. Экспериментальная часть.

В процессе эксперимента применялась стандартная лабораторная посуда, такая как: термостойкие стаканы на 100 мл, мерный цилиндр на 100 мл, мерные колбы на 50 и 100 мл, стеклянные палочки, плитка, сушильный шкаф со встроенным термостатом, аналитические весы. Для работы с утеплительным материалом использовалась пластиковая ванночка, ножницы, линейка, пульверизатор. Мочевина по «ГОСТ 6691-77. Реактивы. Карбамид. Технические условия[34]» и дигидрофосфат натрия по «ГОСТ 245-76 Реактивы. Натрий фосфорнокислый однозамещенный 2-водный. Технические условия [35]».

Эксперимент проводился в два этапа. На первом этапе было установлено соотношение рабочих реагентов для создания антипирена. На втором этапе произвелась подготовка и обработка финальных образцов конопляного утеплителя, полученным антипиреном для последующего анализа их свойств.

2.1 Эксперимент по подбору концентраций компонентов антипирена.

Для проведения эксперимента по подбору концентраций было подготовлено 8 образцов размером 30/50 мм, обработанных антипиреном. Один образец остался необработанным. Дополнительно два образца были обработаны раствором жидкого стекла с концентрацией 50 г/л и 100 г/л, чтобы определить оптимальное количество клеящего компонента, в качестве которого использовалось жидкое стекло. Жидкое стекло выполняет роль связующего компонента, создавая связи между волокнами конопли и частицами антипирена, находящимися на поверхности волокон. В качестве антипиренов были выбраны два вещества, действующие по принципу синергизма. Мочевина, являющаяся источником азота, подходит для обработки, так как азот находится на концах молекулы. Источник фосфора — дигидрофосфат натрия. Исходный раствор жидкого стекла согласно «ГОСТ 13078–81 Межгосударственный стандарт Стекло натриевое жидкое Технические условия[36]» имеет массовую долю силиката натрия в 27%, плотность ρ = 1,47 – 1,52 г/см3 или 1470 -1520 г/л, исходную концентрацию силиката натрия в 400 г/л. Исходный раствор разбавляется дистиллированной водой в мерной колбе. Процесс приготовления раствора антипирена состоял из нескольких этапов. В стакан объёмом 100 мл на весах добавлялся дигидрофосфат натрия, после чего отдельно взвешивалась мочевина. Дигидрофосфат натрия взвешивался в стакане из-за его большого насыпного объёма. Взвешенная мочевина пересыпалась в стакан, затем добавлялась дистиллированная вода, чтобы уровень раствора был чуть ниже 50 мл. Смесь перемешивалась на плитке до полного растворения. После охлаждения раствор переливали в мерную колбу объёмом 50 мл, доводили до метки дистиллированной водой и получали готовый раствор с точной концентрацией реагентов.

Из листа конопляного теплоизоляционного материала вырезают 9 образцов размером 30/50 мм для определения длины обугленного участка. На каждый образец с помощью шариковой ручки

наносится номер. 8 образцов обрабатываются раствором жидкого стекла (100 г/л) методом опрыскивания с обеих сторон, чтобы не допустить полного намокания. Один произвольный образец обрабатывается только раствором жидкого стекла с концентрацией 50 г/л, полученным путем разбавления в два раза, а ещё один — только раствором с концентрацией 100 г/л. Все образцы сушат в шкафу при температуре 90–100 °C в течение 2–3 часов, а 9-й контрольный образец оставляют необработанным. Данные о растворах при подборе рабочих концентраций представлены в таблице 1.

Таблица 1

Приготовления раствора для подборки концентраций.

№ раствора:	Состав:	Концентрация Полученного раствора (г/л)	Мерная колба на 50 мл.
1	Мочевина	50	2.5 г.
	Дигидрофосфат натрия	200	10 г.
2	Мочевина	50	2.5 г.
	Дигидрофосфат натрия	200	10 г.
3	Мочевина	50	2.5 г.
	Дигидрофосфат натрия	500	25 г.
4	Мочевина	50	2.5 г.
	Дигидрофосфат натрия	500	25 г.
5	Мочевина	100	5 г.
	Дигидрофосфат натрия	200	10 г.
6	Мочевина	100	5 г.
	Дигидрофосфат натрия	200	10 г.
7	Мочевина	100	5 г.
	Дигидрофосфат натрия	320	16 г.
8	Мочевина	100	5 г.
	Дигидрофосфат натрия	320	16 г.

На следующем этапе оценивается правильность соотношения концентраций по длине обугленного участка образцов. Для этого измеряется длина обугленного участка в соответствии с «ГОСТ ISO 15025-2012 Система стандартов безопасности труда. Одежда специальная для защиты от тепла и пламени. Метод испытаний на ограниченное распространение пламени [37]» с использованием пламени. Каждый образец подвергается воздействию пламени в одинаковых условиях в течение 10 секунд. Затем измеряются длина обугленного участка, время тления и наличие горения. Образец вертикально закрепляется на штативе внутри вытяжного шкафа, под ним устанавливается газовая горелка так, чтобы пламя находилось на 5 мм выше края образца. Расстояние между горелкой и торцом образца составляет 20 мм. Пламя должно слегка выходить за край образца. По результатам испытаний было выбрано оптимальное соотношение концентраций для образца с соотношением 1/4 мочевины и дигидрофосфата натрия. Результаты подборки рабочих концентраций представлены на таблице 2. Рисунок 1 демонстрирует процесс определения длины обугленного участка.

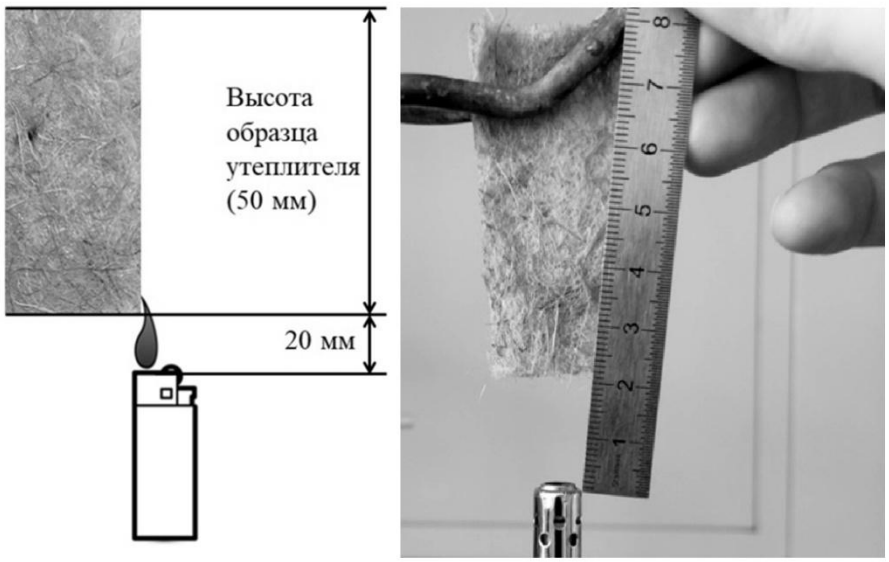

Рисунок 1 - определение длины обугленного участка.

Таблица 2

Результаты подборки рабочих концентраций.

№ образца и раствора для обработки	Длина Обугленного участка (мм)	Тления (с)	Горения	Самозатухание
1	30	2	Плохо	Да
2	10	Нет	Нет	
3	15	1	Плохо	
4	12	1,5	Плохо	
5	16	Нет	Нет	
6	7	2	Нет	
7	5	1,5	Нет	
8	15	Нет	Нет	
9 не обработан	50	-	Горит	Нет
10 ЖС-50	-	40	Горит	
11 ЖС-100	-	20	Горит	

2.2 Подготовка финальных образцов утеплительного материала.

Финальные образцы были подготовлены аналогично с пробными. Различие в размере 50/50 мм. Нумерация этих образцов разбивалась на три группы «B» «C» «D», по пять образцов в каждой. 5-е образцы контрольные – не обработанные. Было разработано 4 контрольных раствора с концентрациями, сохраняющими соотношение 1/4, при этом концентрации увеличивались пропорционально от 1-го до 4-го раствора. При этом образцы из группы «B» предназначались для микроэлектронных снимков и анализов на элементный состав. Группа «C» изучалась на водопоглощения по «ГОСТ 12087 – 2011 Изделия теплоизоляционные, применяемые в строительстве Методы определения водопоглощения при длительном погружении [38]». После группа «C» также подверглась определению длины обугленного участка для получения информации об смывки антипирена после воздействия воды. Оставшиеся группа «D» использовалась для определения длины обугленного участка. В таблице 3 представлен состав антипирена для обработки финальных образцов.

Таблица 3

Приготовление раствора для обработки контрольных образцов.

№ раствора:	Состав:	Концентрация Полученного раствора(г/л)	Мерная колба на 100 мл.
1	Мочевина	25	2,5 г.
	Дигидрофосфат натрия	100	10 г.
2	Мочевина	50	5 г.
	Дигидрофосфат натрия	200	20 г.
3	Мочевина	75	7,5 г.
	Дигидрофосфат натрия	300	30 г.
4	Мочевина	100	10 г.
	Дигидрофосфат натрия	400	40 г.

Открытая пористость и кажущиеся плотность были определены расчётом. По «ГОСТ 24468-2020 изделия огнеупорные, Метод определения кажущейся плотности и общей пористости теплоизоляционных изделий [39]» был предварительно определён объем каждого образца. Для определения водопоглощения каждый из образцов устанавливался в стакан наполненный водой в соответствии с гост. На образец укладывают нагрузку, чтобы предотвратить его всплытие на поверхность. Вода была водопроводная с температурой 20^0C, в соответствии с гост. Предварительно все пять образцов были взвешены на аналитических весах. Спустя время образцы извлекались из воды. Излишку дают стечь за 10 минут. Затем образец снова взвешивался.

Длина обугленного участка измерялась согласно «ГОСТ ISO 15025-2012 [37]». Определение велось у группы «D» и группы «C» после водопоглощения.

Для изучения микроструктуры волокон конопли, с целью оценки качества образующегося огнезащитного покрытия применялся электронный сканирующий микроскоп JSM 6610 LV, JEOL Японского производства. При исследовании был выбран режим микросъёмки с фиксацией вторичных электронов (SEI), ускоряющие напряжение было установлено на 20 кВ. Для изучения количественного состава атомов веществ на поверхности волокон утеплителя использовалась система энергодисперсионного микроанализа INCA Energy 450.

3. Результаты и экспериментов:

3.1 Результат эксперимента по подборки концентраций компонентов антипирена.

По результатам подбора концентраций было установлено следующее: наименьшая длина обугленного участка наблюдалась у образцов 2, 6 и 7. Тления не наблюдалось у образцов 2, 5 и 8. Наихудшие результаты показали образцы 1, 3 и 4. Оптимальное соотношение мочевины и дигидрофосфата натрия составило 1/4, а соотношение 1/10 дало наихудшие результаты для образцов 3 и 4. Концентрация дигидрофосфата 500 г/л оказалась чрезмерной. На рисунке 2 показана длина обугленного участка, а на рисунке 3 - образцы, обработанные жидким стеклом в концентрациях 100 и 50 г/л. Жидкое стекло продемонстрировало некоторые огнезащитные свойства. В итоге для окончательной обработки была выбрана концентрация силиката натрия 100 г/л.

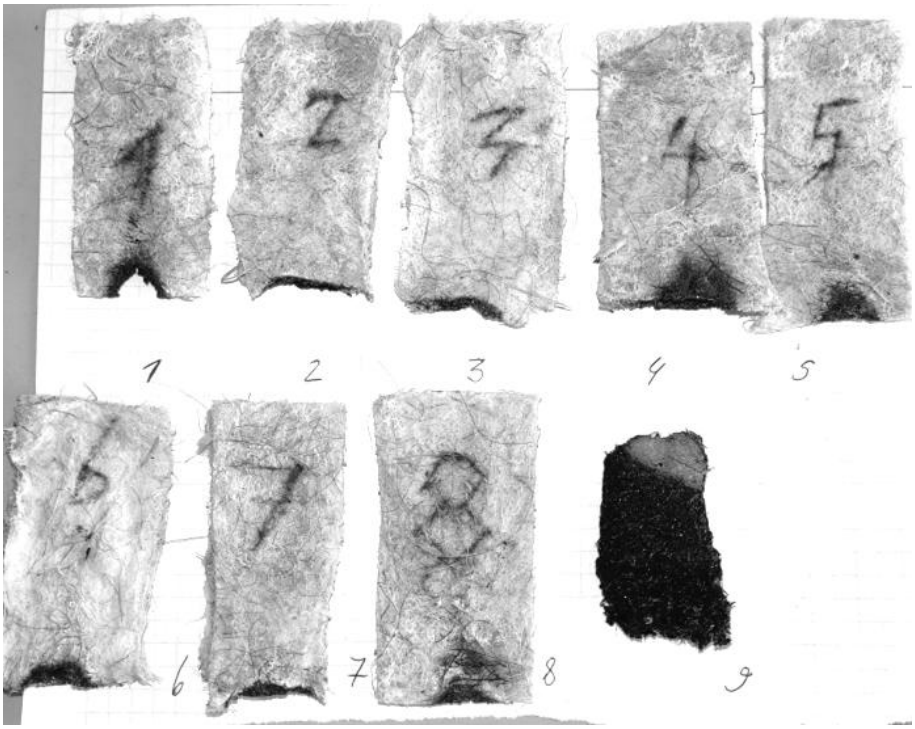

Рисунок 2 - Длина обугленного участка у образцов для подборки концентраций.

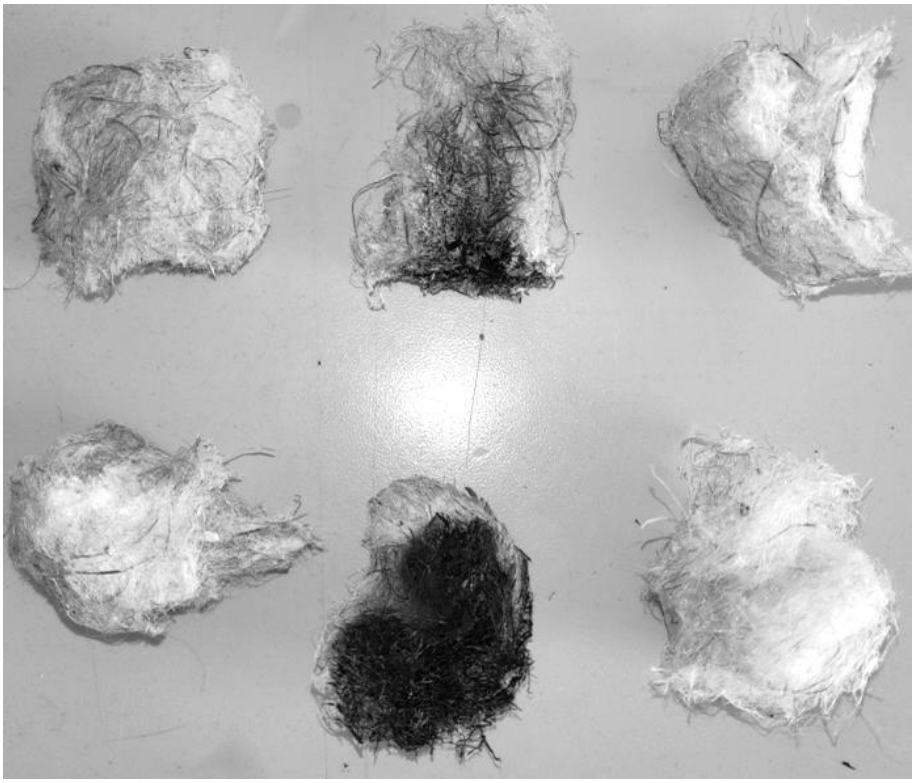

Рисунок 3 - Образцы, обработанные только жидким стеклом с концентрацией 100 и 50 г/л соответственно.

3.2 Результат эксперимента по огнезащитным свойствам обработанного утеплителя.

В ходе эксперимента также проверялась устойчивость огнезащитного покрытия к влаге. Образцы группы «С» подвергались водопоглощению и промывке, а затем высушивались. Данные представлены в таблице 4, из которой видно, что обе группы обработанных образцов самозатухают. Пятый образец, не обработанный, дал отрицательный результат. В группе «D» время тления образцов напрямую зависело от концентрации растворов: первые два образца тлели 1 и 0,5 секунды соответственно, в то время как у образцов 3 и 4 тление отсутствовало. У пятого, ничем не обработанного, образца наблюдалось длительное тление после тушения. Изменения времени тления образцов группы «С», подвергшихся воздействию воды, были неравномерными и не зависели пропорционально от длины обугленного участка, что объясняется неоднородностью структуры конопляного утеплителя. Разные кусочки одного листа могут иметь разные характеристики.

Таблица 4

Анти пожарные свойства образцов групп «С» и «D».

№ образца	Само затухание (с)	Длина обугленного участка (мм)	Тления (с)	Горения (с)
1С	+	50+	2	Слабо
2С	+	40	2,5	Слабо
3С	+	50+	2	Слабо
4С	+	42	3	Слабо
5С	-	Горит	Тлеет	Горит
1D	+	30/25 (28)	1	Нет
2D	+	25/20 (23)	0,5	Нет
3D	+	20/17 (19)	-	Нет
4D	+	15/10 (13)	-	Нет
5D	-	Горит	Тлеет	Горит

Длина обугленного участка представлена в таблице и на рисунке 4. У образцов конопляного утеплителя группы «D» наблюдается пропорциональное уменьшение длины обугленных участков с увеличением концентрации растворов антипиренов. В группе «С» после воздействия воды длина обугленных участков менялась хаотично, что ухудшило их противопожарные свойства. У второго образца длина обугленного участка составила 40 мм, что подтверждает хорошие огнезащитные свойства раствора с концентрацией мочевины и дигидрофосфата натрия 50/200 г/л, который показал наилучший результат в ходе эксперимента.

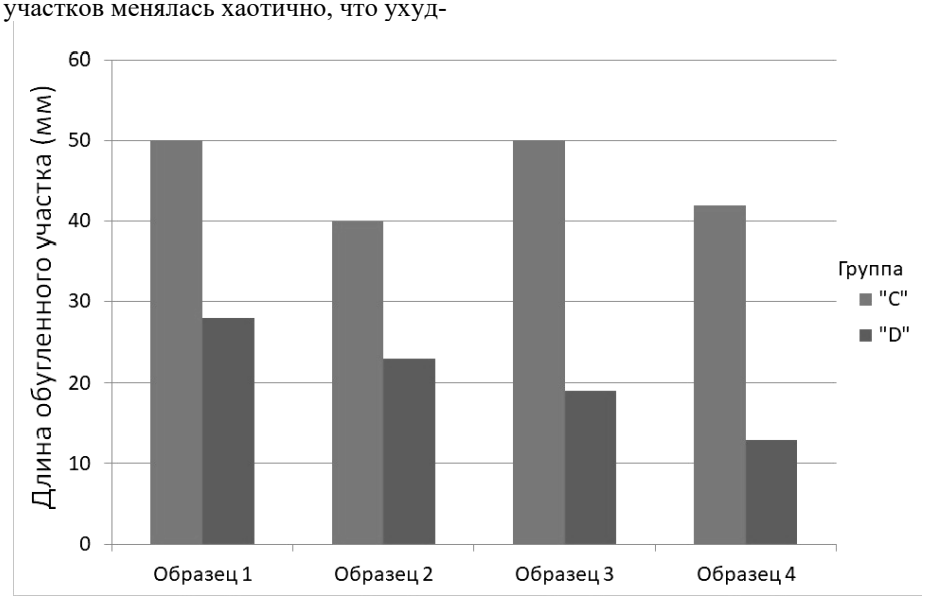

Рисунок 4 - Длина обугленного участка образцов групп «С» и «D».

В таблице 6 приведены данные о горении образцов. Все образцы конопляного утеплителя группы «D», за исключением 5 контрольных, не горели. Образцы группы «С» после воздействия воды утратили большинство противопожарных свойств и показали повышенную горючесть при контакте с огнём. Требуется не допускать воздействие воды на конопляный утеплитель, обработанный таким способом. На рисунках 5 и 6 представлена группа «D». Можем наблюдать на рисунке 5 два разных обугленных участка с перпендикулярных граней. Проводилось по 2 замера, в следствии было выбрано среднее арифметическое. Замерялась именно длина обугленного участка. Верхние черные полосы, в свою очередь оказываются просто копотью, а

именно сам прогар значительнее ниже. На рисунке 6 может показаться, что длина обугленного участка менялась не пропорционально. Но длина прогара менялась более линейно. Не чем не обработанные, 5-е образцы конопляного утеплителя сильно горели. На фотографиях представлены потушенные образцы.

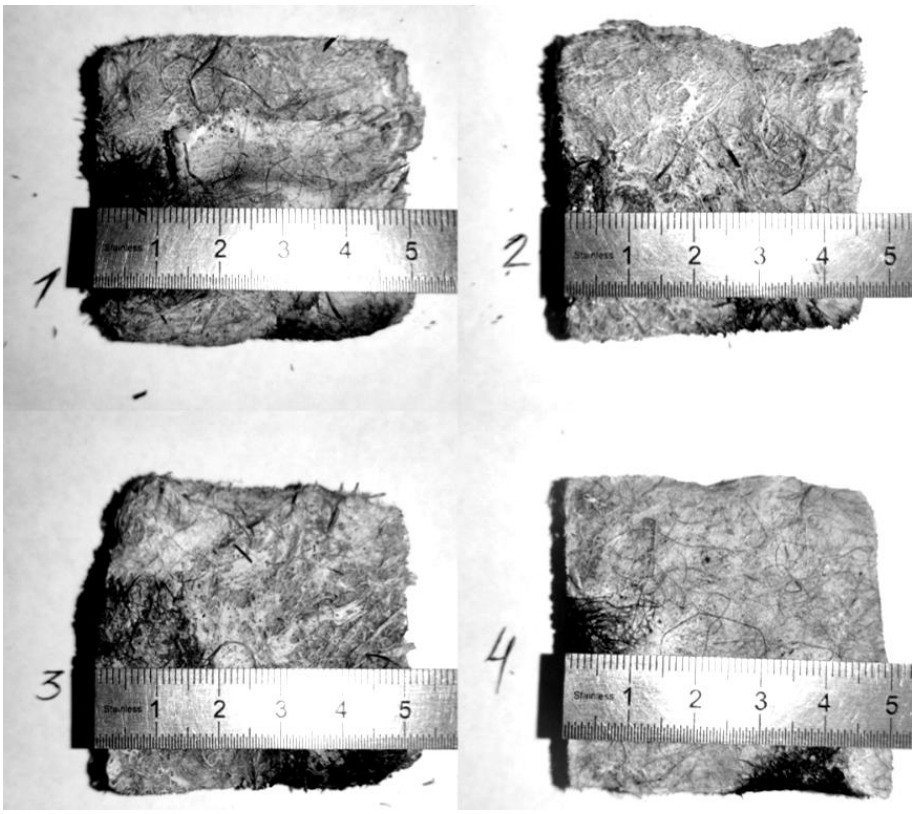

Рисунок 5 - Длина обугленного участка образцов групп «D».

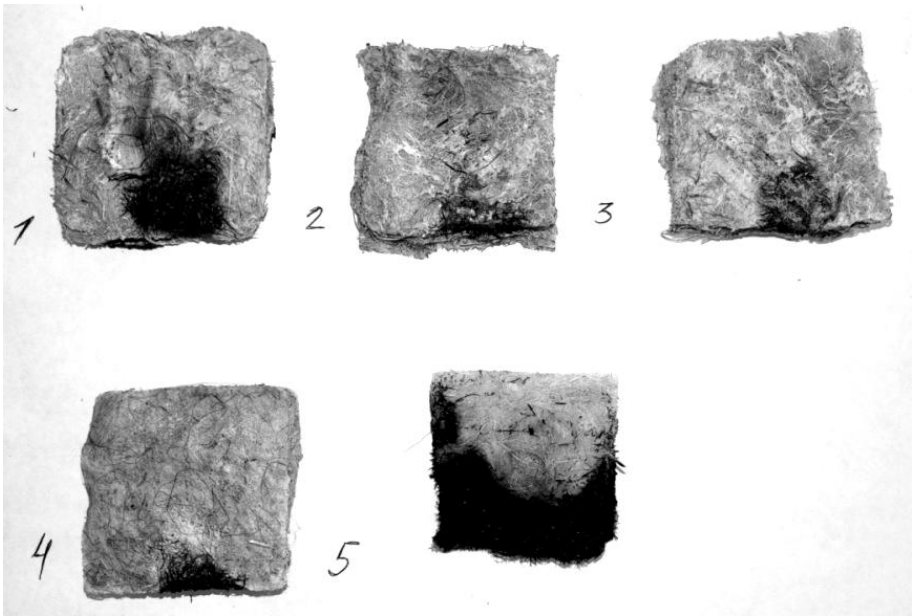

Рисунок 6 - Образцы группы «D» в сравнении с не обработанным образцом.

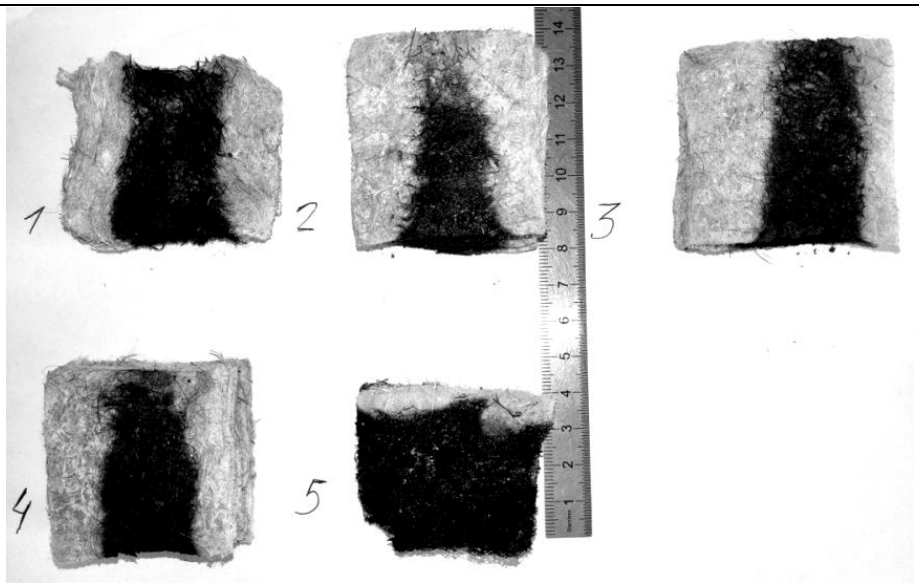

Рисунок 7 - Длина обугленного участка образцов групп «С».

На рисунке 7 показаны образцы группы «С» после измерения водопоглощения, на которых видны значительные прогары. Это подтверждает, что конопляный утеплитель, обработанный таким составом, не должен взаимодействовать с водой. На втором образце отмечена наименьшая длина обугленного участка. Вывод: раствор для обработки конопляного утеплителя эффективно защищает от огня, но неустойчив к воздействию воды. Однако даже после воздействия воды сохраняются противопожарные свойства. Основная причина неустойчивости к воздействию воды — растворимость жидкого стекла, закрепителя антипирена. Наиболее оптимальная концентрация у второго раствора — положительный фактор, снижающий себестоимость такой обработки.

3.3 Результат исследования водопоглощения и плотности.

Водопоглощение при длительном полном погружении было подсчитано по формуле, указанной в «ГОСТ 12087 – 2011 Изделия теплоизоляционные, применяемые в строительстве Методы определения водопоглощения при длительном погружении [34]», в свою очередь согласно требованиям методике «2А». Расчёт результатов для определения кажущейся плотности велся согласно ГОСТ 24468-2020 [39]. Все результаты занесены в таблицу 5.

Таблица 5

Результаты водопоглощения образцов группы «С».

№	1С	2С	3С	4С	5С
m_1 после насыщения водой + поддон (г)	33,645	38,313	41,19	32,756	35,99
m_2 сухого образца (г)	3,997	6,254	7,341	8,092	2,318
m_3 сухого поддона (г)	6,836	6,966	7,061	6,941	6,790
Водопоглощение (%V)	60,1 %	52,2 %	56,4 %	39,7 %	62,2 %
V объем образца ($см^3$) ($м^3*10^{-6}$)	37,975	48,077	47,535	44,625	43,056
$\rho_{ср}$кажущиеся плотность материала ($кг/м^3$)	105,3	130,1	154,4	181,3	53,8

На рисунке 8 видно, что наибольшее водопоглощение у необработанного образца, что вполне ожидаемо, поскольку антипирен влияет и на другие свойства утеплителя. Минимальное водопоглощение отмечено у 4-го образца, при этом 2-й образец показал более высокий результат, чем 3-й, что подтверждает удачный подбор состава антипирена. У 1-го образца снижение водопоглощения незначительное. Водопоглощение зависит от неоднородности материала и растворимости применяемых веществ. На рисунке 9 представлена диаграмма кажущейся плотности образцов группы «С». Наблюдается линейный рост плотности, связанный с увеличением массы. Поскольку речь идёт о кажущейся, а не об истинной плотности, напрямую оценивать её некорректно. С увеличением концентрации антипиренов возрастает масса утеплителя, что может негативно сказаться на его теплоизоляционных свойствах. Дополнительные погрешности связаны с уплотнением образцов утеплителя при его пропитке, сушке и нарезке.

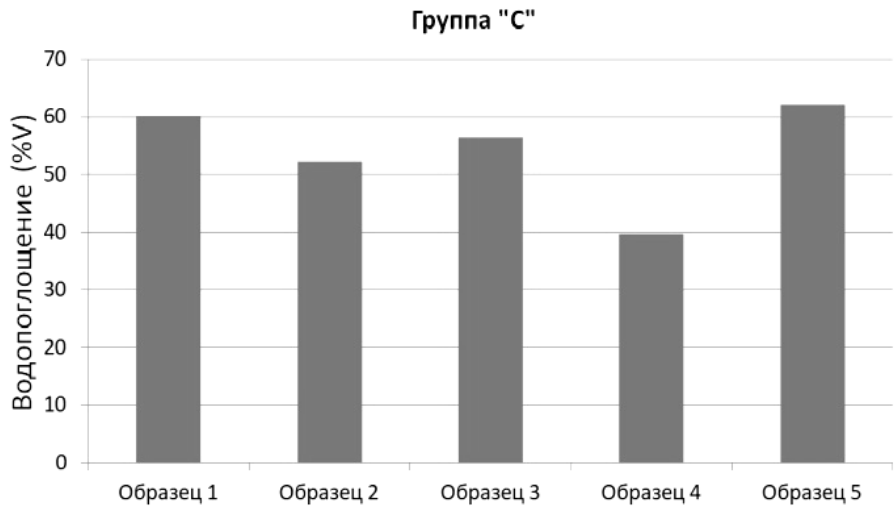

Рисунок 8 - Диаграмма водопоглощения образцов групп «С».

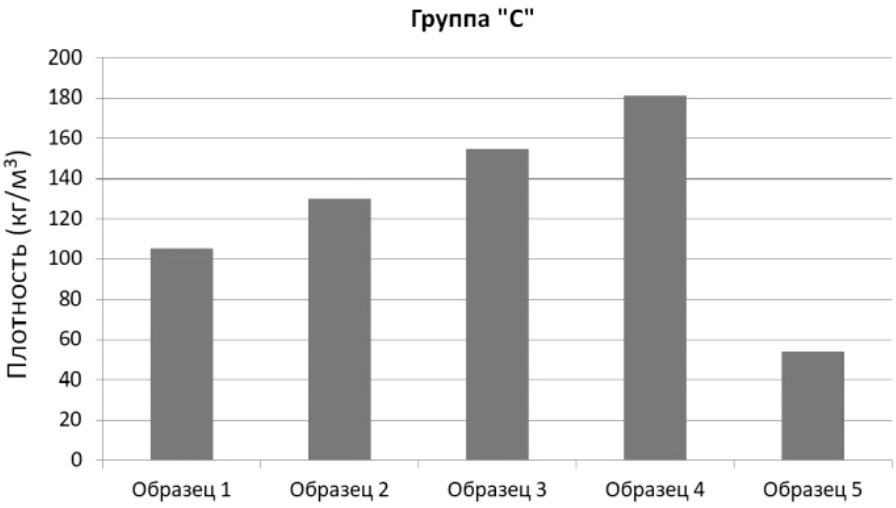

Рисунок 9 - Диаграмма кажущейся плотности образцов групп «С».

3.4 Результаты энергодисперсионного анализа и микрофотографии.

Теперь рассмотрим результаты микроскопии и энергодисперсионного анализа. Все фотографии сделаны при напряжении 20 кВ с фиксацией вторичных электронов. Исследованию подверглись образцы группы «В»: 2-й образец, обработанный раствором мочевины и дигидрофосфата (50/200 г/л), показавший наилучшие результаты в предыдущих исследованиях, а также 5-й контрольный образец без обработки. На рисунках представлены электронные микрофотографии конопляных волокон с увеличением в 300, 100 и 30 раз. Рисунки 10 – 12 демонстрирует микроснимки 2-го образца. Можем наблюдать равномерное покрытие всех сторон волокна защитным слоем. Наблюдаются области, где пространство между волокон защищено такой же антипиреновой плёнкой. Это подтверждает положительные свойства у этого образца, наблюдаемые ранее. Можем сделать вывод, что антипирен эффективно предотвращает доступ теплоты и кислорода к волокну в процессе горения. Защитная пленка сдерживает газы, которые могут поддерживать горение. На поверхности образуется слой пористого теплоизолирующего угля.

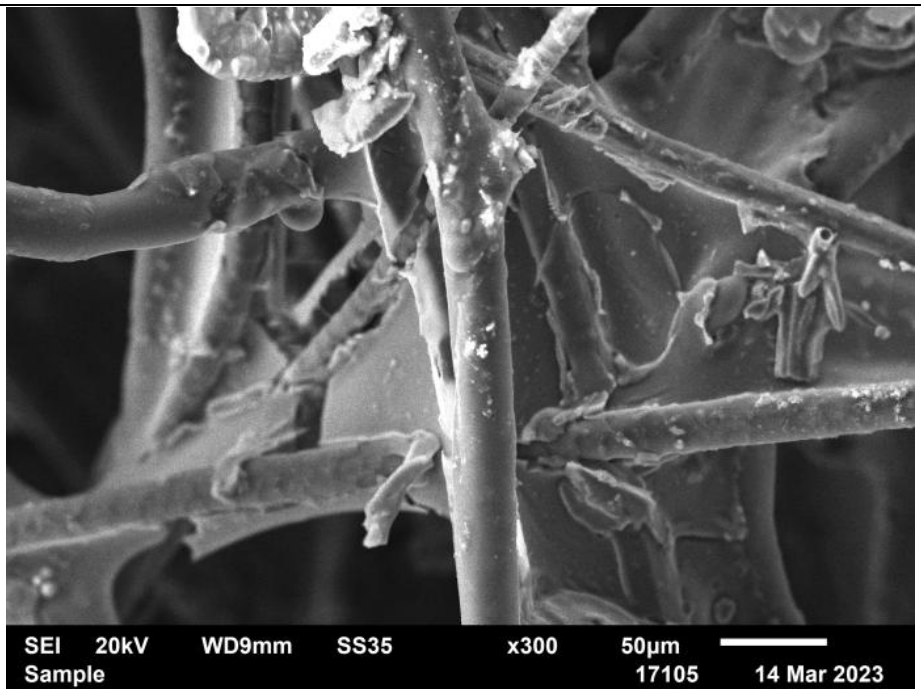

Рисунок 10 - Образец 2B X300.

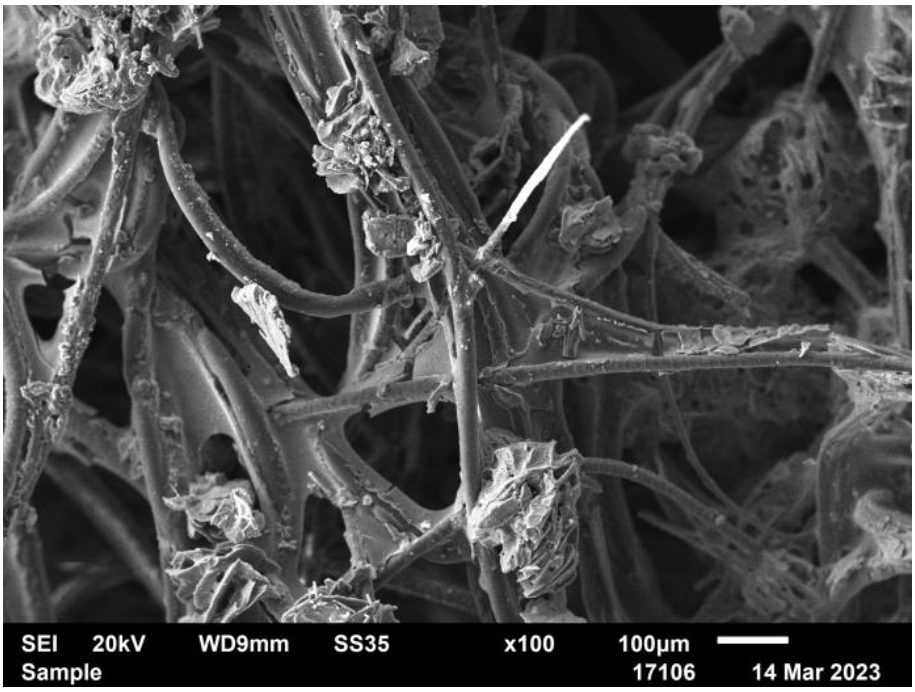

Рисунок 11 - Образец 2B X100.

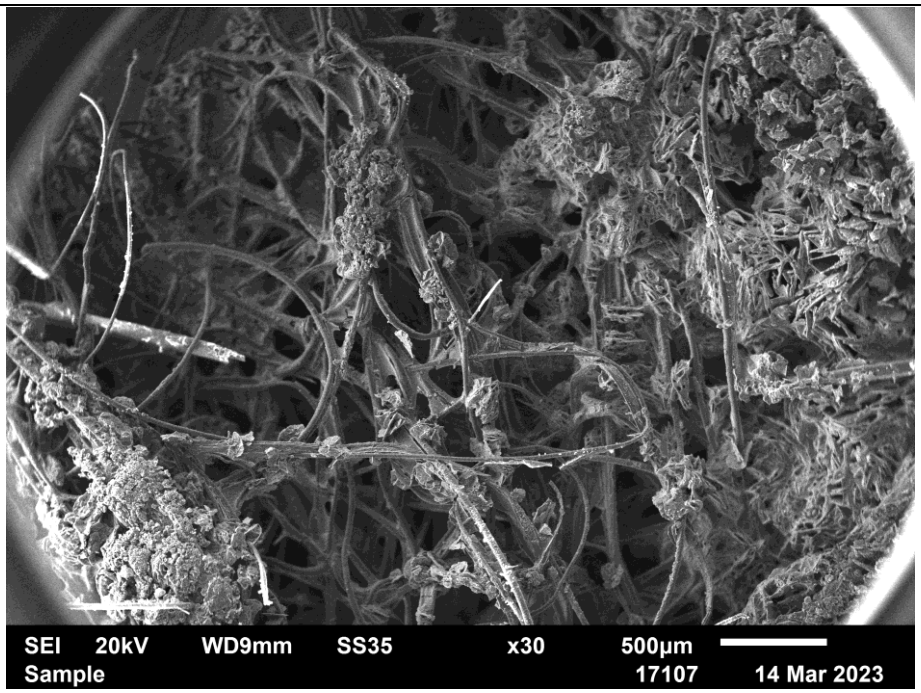

Рисунок 12 - Образец 2B X30.

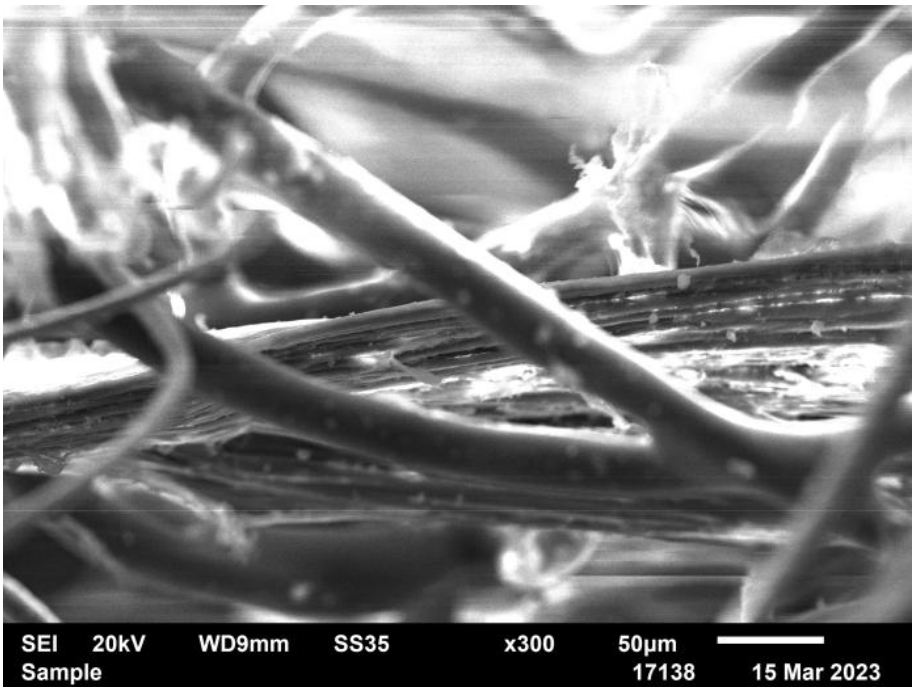

Рисунок 13 - Образец 5B X300.

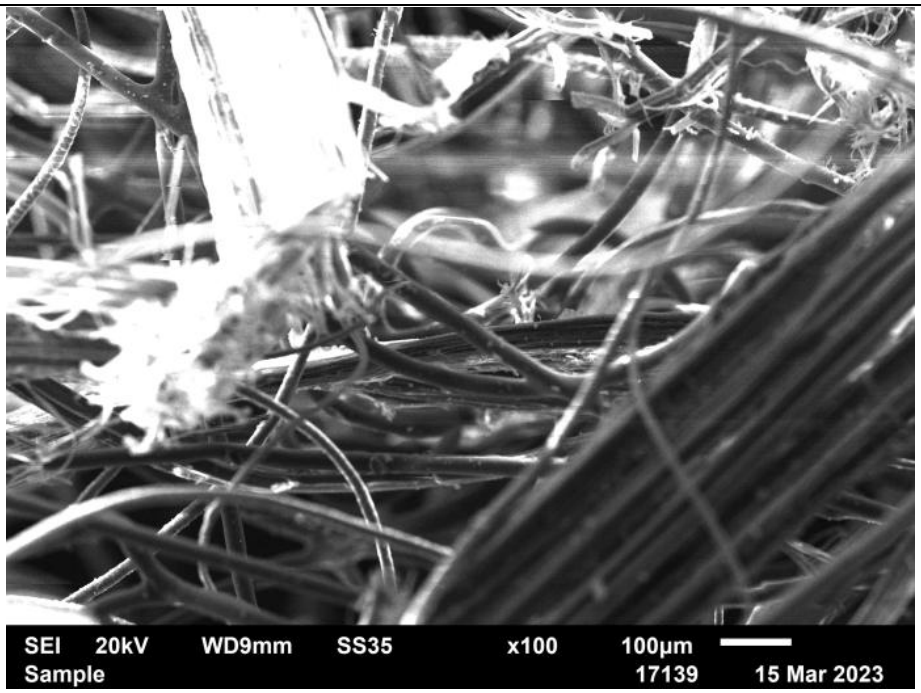

Рисунок 14 - Образец 5В Х100.

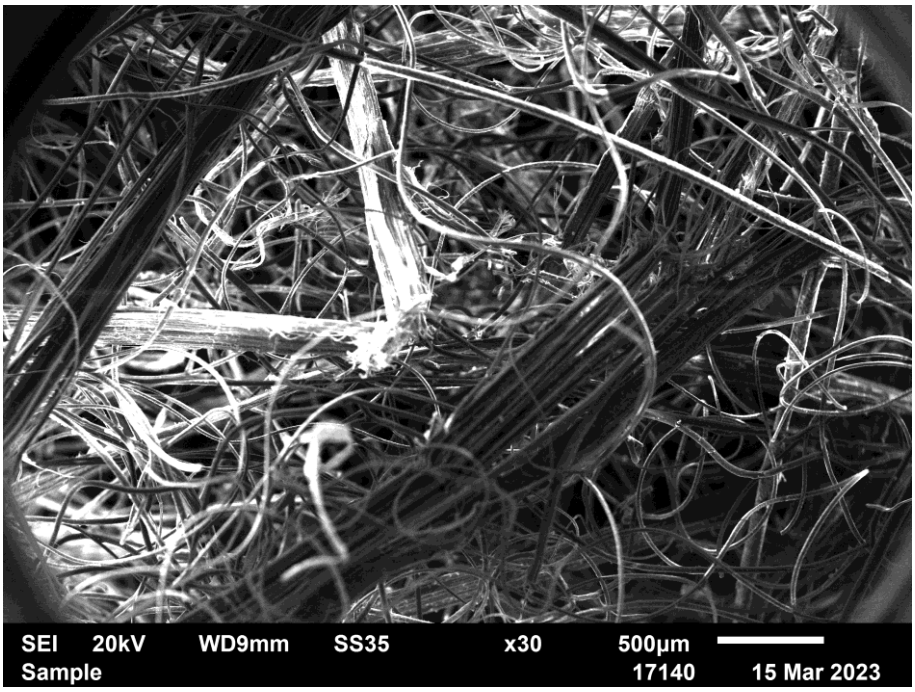

Рисунок 15 - Образец 5В Х30.

На рисунках 13 – 15 показан необработанный образец волокна, позволяющий увидеть его первозданную структуру для сравнения с обработанным вариантом. В таблице 6 представлены результаты элементного анализа, полученные при сканировании образцов в трех точках. В таблице указаны средние арифметические значения массовых долей элементов. На диаграмме на рисунке 16 сравнивается состав обработанного и необработанного образцов, где углерод, кислород, натрий, кремний и фосфор идут на диаграмме в порядке возрастания. Оранжевым цветом отмечена сумма остальных элементов. Углерод входит в состав волокон конопли и мочевины, кислород присутствует во всех компонентах смеси, натрий - в дигидрофосфате натрия и силикате натрия, а кремний и фосфор - в кислотных остатках. Диаграмма показывает, что обработанный образец содержит больше фосфора, кремния и натрия. Таким образом, компоненты раствора антипирена эффективно покрыли второй образец, образовав на волокнах сплошную пленку, что обеспечило его положительные свойства даже после воздействия воды. Обработка вторым раствором является более целесообразной, так как достигается хороший эффект при низкой концентрации компонентов. На рисунках 17 и 18 представлены спектрограммы энергодисперсионного анализа второго и пятого образцов группы «В».

Таблица 6

Результат элементного анализа 2-го и 5-го образцов группы «В».

Количество элемента в (%) от суммарного количества		Образец 2В	Образец 5В
Элементы ожидаемые в исследовании	C	20,95	54,87
	O	45,04	41,00
	Na	14,18	-
	Si	2,04	0,24
	P	15,51	-
Элементы не относящиеся к исследованию	Сумма элементов не относящиеся к исследованию	2,28	3,88
	Mg	-	0,16
	Al	0,14	0,26
	S	-	1,55
	Cl	-	-
	K	0,10	0,27
	Ca	0,19	0,96
	Fe	1,85	0,68
Общая сумма (%) всех элементов		100,00	100,00

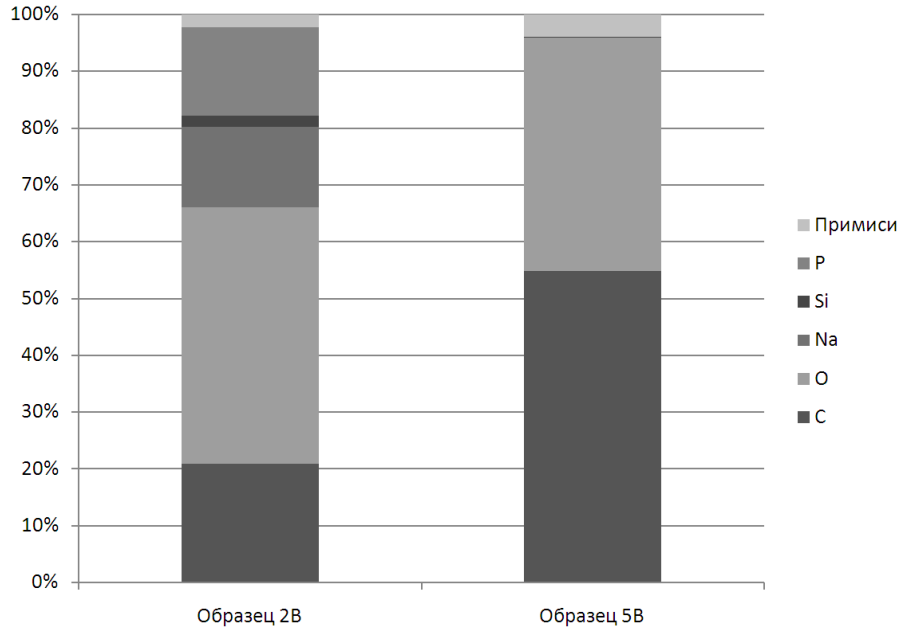

Рисунок 16 - Диаграмма элементного состава 2-го и 5-го образцов группы «В».

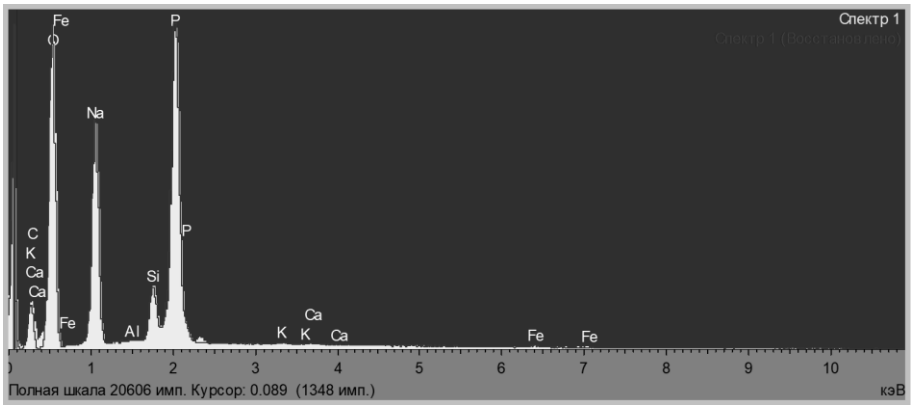

Рисунок 17 – Спектр образца 2В

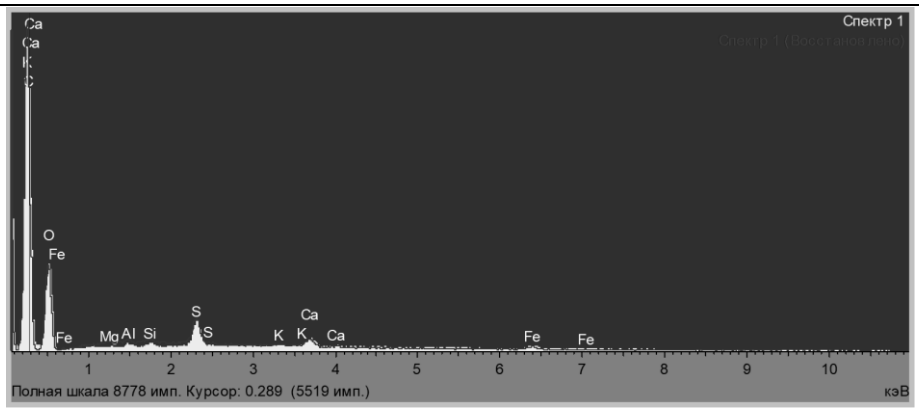

Рисунок 18 – Спектр образца 5В

4. Заключение.

Удалось разработать эффективный раствор антипирена на основе фосфора и азота для пропитки конопляного утеплителя, предварительно обработанного раствором жидкого стекла (100 г/л). В ходе подбора оптимальных концентраций был выявлен наилучший состав: 50 г мочевины, 200 г дигидрофосфата натрия. Такой раствор сохраняет огнезащитные свойства даже после воздействия воды, при этом обработанный материал имеет низкое водопоглощение и занимает второе место по этому параметру после образца 4. Кроме того, утеплитель с таким составом отличается высокой плотностью, что делает его более удобным в эксплуатации по сравнению с 3-м и 4-м вариантами. Использование второго состава позволяет снизить стоимость обработки, при этом его свойства не уступают другим образцам. Микроснимки подтверждают высокое качество огнезащитного покрытия на образце с этим составом. Основной недостаток смеси — низкая водостойкость, что требует поиска водоотталкивающего компонента для улучшения характеристик. Также стоит отметить неоднородность самого утеплителя и его физико-химических свойств.

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CULTUROLOGY

THE ROLE OF LIBRARIES OF TEMPORARILY DISPLACED UNIVERSITIES IN ENSURING THE SUSTAINABILITY AND ACCESSIBILITY OF THE EDUCATIONAL PROCESS IN WARTIME

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Abstract

In conditions of criminal aggression and forced relocation of higher education institutions, the issue of maintaining the continuity of the educational process and access to educational and scientific resources becomes critically important, as providing students with the necessary knowledge is a guarantee of their future professional success. Libraries of temporarily displaced universities are key centres of information support, providing students, teachers and researchers with the necessary materials regardless of geographical or infrastructural constraints. The use of modern information and communication technologies, the development of electronic resources and the adaptation of services to distance and blended learning formats are becoming the basis for the sustainability and resilience of the educational environment. At the same time, libraries perform an important function of preserving academic heritage and maintaining scientific communication, which contributes to the integration and adaptation of displaced universities into the national and international scientific and educational space. In the context of military challenges, their activities combine traditional forms of library service with innovative approaches aimed at ensuring equal access to knowledge and resources. Thus, libraries are becoming not only an infrastructural or exclusively scientific, but also a strategic link in preserving the integrity and quality of the educational process in crisis conditions.

Keywords: scientific libraries of higher education institutions, internally displaced higher education institutions, adaptation strategies, support for the educational process.

Analysis of research and publications. Along with the full-scale invasion of the russian federation, the issue of studying the resilience and sustainability of the activities of higher education institution libraries has gained relevance; thus, the study by I. I. Stambol [6] describes the activities of libraries in the city of Odesa during the first months of the invasion. The article by S. Ivanenko [1] analyzes the work of the Scientific Library of the E. O. Paton Institute of Electric Welding of the National Academy of Sciences of Ukraine, highlighting changes in the approaches and areas of activity of a rather narrowly specialized institution. The issue of preservation and development of libraries is also raised by O. Vasylenko [7]. The problem of adapting the system of functions of Ukrainian libraries under martial law is covered by L. Kravets [4]. Such systematic work of many researchers indicates considerable interest in preserving the functioning of library institutions themselves, as well as the further need for thorough scientific research.

The relevance of the study is based on the need to highlight the means and ways of integrating libraries of higher education institutions into the realities of the present. It also helps to highlight the transformations taking place in the services provided by libraries, their creation of new technological, organizational, and educational models, which, in turn, highlights comprehensive approaches to ensuring the resilience and sustainability of the educational process within higher education institutions themselves.

Presentation of the main material. We agree with the opinion of O. Klymenko and N. Bachynska [3] that it is precisely "reader-centrism" that is the main guarantee of the success of a modern library's activity, while the "accumulation of collections" gradually assumes a secondary function, since the priority becomes not only the preservation and replenishment of printed and electronic resources, but also ensuring their maximum accessibility and relevance to the needs of users (readers). In modern conditions, the library acts not so much as a repository of knowledge, but rather as an active communicative and service space capable of promptly responding to the requests of the academic community. For the libraries of universities that were forced to leave the premises of their own higher education institutions, such user orientation acquires particular significance, since it is precisely the individualization of communication approaches, such as active involvement in the development of their own social networks (Facebook, Instagram), the development of remote services, and the integration of digital resources, that make it possible to maintain the continuity of the educational process. Thus, the concept of "reader-centrism" [3] is transformed into the strategic foundation of the library's activity, determining its adaptability, innovativeness, and ability to function effectively under conditions of wartime challenges and limited resources.

On May 16, 2025, on the basis of the temporarily displaced higher education institution Kherson State University, which at that time was located at Vasyl Stefanyk Precarpathian National University, an All-Ukrainian seminar was held with the aim of uniting the libraries of temporarily displaced universities under the common slogan: "New challenges – new opportunities" [5], which, in our opinion, demonstrates the scientific

community's aspiration to consolidate efforts, its inclination toward cooperation, and its ability to develop strategies for responding to crisis circumstances and to form a unified vision for the development of library services in new socio-cultural and technological realities.

In our further research, we use the seminar materials as a source for the practical analysis of various approaches to adaptation and support of the scientific and educational process in the above-mentioned higher education institutions.

As representatives of the KSU library indicate, their transformational path was forced; however, it was precisely this circumstance that provided the impetus for strategic changes. During the period of forced displacement, library staff have regularly conducted seminars for Doctor of Philosophy (PhD) candidates on the topic "Scientometrics in the Life of a Researcher," highlighting the importance of mastering scientometric skills as an integral part of a young scholar's work. Such events contribute to the development of skills in effective search, analysis, and interpretation of scientific information, increasing publication activity and the academic visibility of researchers. They are also aimed at raising awareness among young scholars, particularly within the framework of academic integrity.

It is precisely in the context of academic integrity that in 2024 the library staff organized a round table: "Open Science and the Role of the Library in Supporting Scientific Research" [2], which was attended not only by master's students but also by representatives of scientific libraries of other higher education institutions, namely: H. S. Skovoroda Kharkiv National Pedagogical University, Borys Grinchenko Kyiv Metropolitan University, etc. The event became a kind of platform for discussing modern approaches to implementing the principles of integrity, increasing the level of transparency and accessibility of research results, as well as for exchanging best practices among libraries of different higher education institutions. Particular attention was paid to the role of the library as an intermediary between researchers and global information resources, capable of providing not only access to scientific data but also methodological support for research activities, which, in our opinion, rightly correlates with the principles of the above-mentioned "reader-centeredness."

It is also worth emphasizing that the library staff hold meetings with first-level higher education students aimed at familiarizing new students with the work of the library, already in a virtual format, since, unfortunately, all the buildings of Kherson State University were damaged.

Particular attention was paid to institutions of the so-called "first wave" [5], that is, higher education institutions from the temporarily occupied territories of Donetsk region, Luhansk region, and Crimea.

A representative of Luhansk Taras Shevchenko National University, Ms. Mariia Pochynkova, delivered a presentation entitled: "The Library of a Displaced University: Losses, Prospects, Opportunities." It is worth emphasizing that a "School of Academic Integrity" was established on the basis of the library, in which, as of 2024, 738 faculty members and students have completed training. This became a vivid example of the systematic work of the library in the direction of forming a culture of academic integrity among academic and pedagogical staff and students, and the scale of coverage indicates the success of the chosen model for implementing the educational program, and a high level of engagement in such initiatives.

Despite the absence of an automated library and information system (only the software "UFD Library" remained partially accessible, as well as the absence of professionally trained staff, and significant physical losses of collections), during the second displacement the LNU library gained access to new automated software Koha, which made it possible to significantly increase the level of staff qualification.

This implementation became not only a technical update but also a factor in the qualitative transformation of all library activities, as it allowed for the creation of a "multi-location library," given that the university is forced to operate simultaneously in three cities of the Poltava region. The transition to the Koha platform opened up opportunities for the systematization of collections, the expansion of search tools, and an increase in reader service efficiency, particularly through integration with electronic catalogs and external databases, with which the LNU library is steadily expanding its cooperation. Simultaneously with the technical changes, the process of increasing digital literacy and professional competencies of employees began, which made it possible to compensate for personnel losses—as only two employees without specialized higher education remained during the second relocation (from Starobilsk to the Poltava region)—and to create conditions for the implementation of innovative services. Thus, gaining access to Koha became an important stage in overcoming the consequences of material and personnel losses, and also made it possible to form a new library model oriented toward flexibility, interactivity, and the continuous renewal of services in the interests of the academic community.

The LNU Library identifies opportunities for further development in deepening the use of digital capabilities, specifically strengthening the already high rankings of its own repository, as well as expanding the integration of the repository with international scientometric databases and open access platforms. One of the priority areas is the development of analytical tools for monitoring the use and citation of scholarly works, which will contribute to increasing the visibility of the university's research results in the global scientific community.

Representatives of the Dmytro Motornyi Tavria State Agrotechnological University, which was previously based in Melitopol and is now located in Zaporizhzhia at the Zaporizhzhia National University, also joined the discussion.

To support the educational process, library staff created "Thematic Collections" that meet the requirements of the university's educational programs and cover the main disciplinary areas of student training. The formation of these "Thematic Collections" is carried out manually by library staff, taking into account

curriculum plans and programs, which ensures their relevance and practical value for students and teachers. The collections themselves include periodicals and academic manuals in digital format, as almost the entire library collection was lost in the temporarily occupied territories.

Separately, an index was created according to the Sustainable Development Goals, providing quick access to literature covering issues of ecology, sustainable growth, innovation, and partnership.

Among the informational and educational activities, it is worth highlighting the large number of events aimed both at patriotic education, such as "Ukraine. The Strength of an Unconquered Nation", "Capitals of Ukraine: A Journey Through History", and purely professional ones (related to the university's agricultural specialization): "Dmytro Motoronyi. A Pioneer of the Agricultural Sector". Such student engagement allows the library to transform not only as a scientific resource but also as a center of the university's cultural life, contributing to the preservation of the institution's "distinctive feature" [5]. As a consequence of the full-scale invasion by the Russian Federation, the staff faced the challenge not only of preserving national memory and regional achievements but also of addressing past mistakes [5].

Conclusions. Analyzing the activities of libraries of internally displaced higher education institutions, based only on several examples: KSU, Taras Shevchenko LNU, and TDATU, we confirmed the previously stated view that the library has become a catalyst for transformations in the educational and scientific process. Despite the inevitability of the transformations themselves, the loss of paper collections, loss of staff, destruction of buildings, and, in our opinion, the most painful – the loss of personnel, libraries demonstrate high adaptability and integration into scientific and educational activities. The conduct of online events and training courses aimed at enhancing academic integrity and transparency of the educational process itself also indicates readiness to respond to the needs of students and academic staff.

Digital innovations are also of particular importance, such as digitization of collections, continuous expansion of the repository, and implementation of specialized, advanced library and information systems (Koha, etc.).

In our work, we focused on only some of the libraries of displaced higher education institutions; as of now, according to the report of the Ministry of Education of Ukraine, there are 44 such institutions [2], which makes further scientific research in the area we have defined even more relevant.

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ECONOMIC SCIENCES

IMPLEMENTATION OF DIGITAL HR TECHNOLOGIES IN HR MANAGEMENT OF HIGHER EDUCATION INSTITUTIONS

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Abstract
This article examines the theoretical and practical aspects of implementing digital HR technologies in the HR management systems of higher education institutions. It examines the key concepts of HR digitalization, modern tools for automating HR processes, and the advantages of their application in universities. International and national practices are analyzed, identifying key areas of digital HR process transformation and their impact on the effectiveness of HR management in educational organizations. It demonstrates that digital HR technologies contribute to the optimization of recruiting, performance assessment, professional development, and staff motivation.
Keywords: HR digitalization, HR management in universities, digital technologies, HR analytics, HR process automation, digital HR tools.

1. Introduction.

In today's economic and social climate, high-quality HR management is becoming a crucial component of the sustainable development of higher education institutions. Digitalization of HR processes is a key area for improving HR management efficiency and helping universities adapt to the challenges of the digital economy. Digital HR technologies encompass recruitment automation, the implementation of analytical systems, digital performance assessment, remote training, and skills development. These technologies ensure greater precision in HR management, reduced administrative costs, and the creation of flexible workflows.

2. Theoretical aspects of the research.

HR digitalization is a complex transformation of HR processes using information and communication technologies to automate and optimize personnel management. In scientific literature, digitalization of HR management is considered the basis for the transition from the traditional HRM model to strategic human resource management based on data and analytics[1]. Digital HR systems include modules for personnel selection, automated data recording, KPI monitoring, training and development systems, and HR analytics[2].

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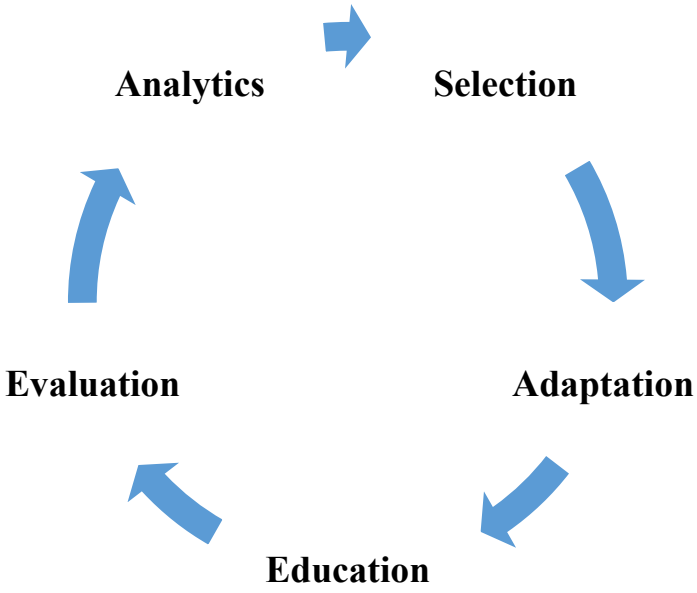

Figure 1. Diagram of digital HR processes in a university[3]

The figure illustrates a cyclical HR management process in which digitalization plays a key role at every stage. The process begins with the collection of personnel data, including information on qualifications, performance, and employee needs. The data is then analyzed and processed using digital tools, enabling the identification of talent strengths, development areas, and potential. Based on this analysis, strategic HR management decisions are made, including career development planning, task allocation, and adjustments to incentive programs[4]. The next stage is the implementation of management decisions, where digital platforms help monitor task completion and track performance indicators. The cycle concludes with results assessment and feedback, which feeds back into the data collection stage, ensuring continuous improvement of HR processes[5]. This approach ensures the continuous development of talent, increases employee engagement, and improves the quality of HR management in higher education institutions.

Below is a diagram showing the impact of digitalization on the efficiency of HR processes. The diagram illustrates the consistent impact of digitalization on HR management in higher education institutions. The implementation of digital technologies enables the collection and processing of large volumes of personnel data, providing access to accurate and up-to-date information. Improved data quality, in turn, facilitates rapid and informed management decision-making, as managers are able to quickly assess employee performance, allocate resources, and adjust HR strategies.

[3]Prepared by the author.
[4] Kavanagh, Michael J., et al. Human Resource Information Systems: Basics, Applications, and Future Directions. 3rd ed., SAGE Publications, 2015
[5] Brockbank, Wayne. "If HR Were Really Strategically Proactive: Present and Future Directions in HR's Contribution to Competitive Advantage." Human Resource Management, vol. 38, no. 4, 1999, pp. 337–352.

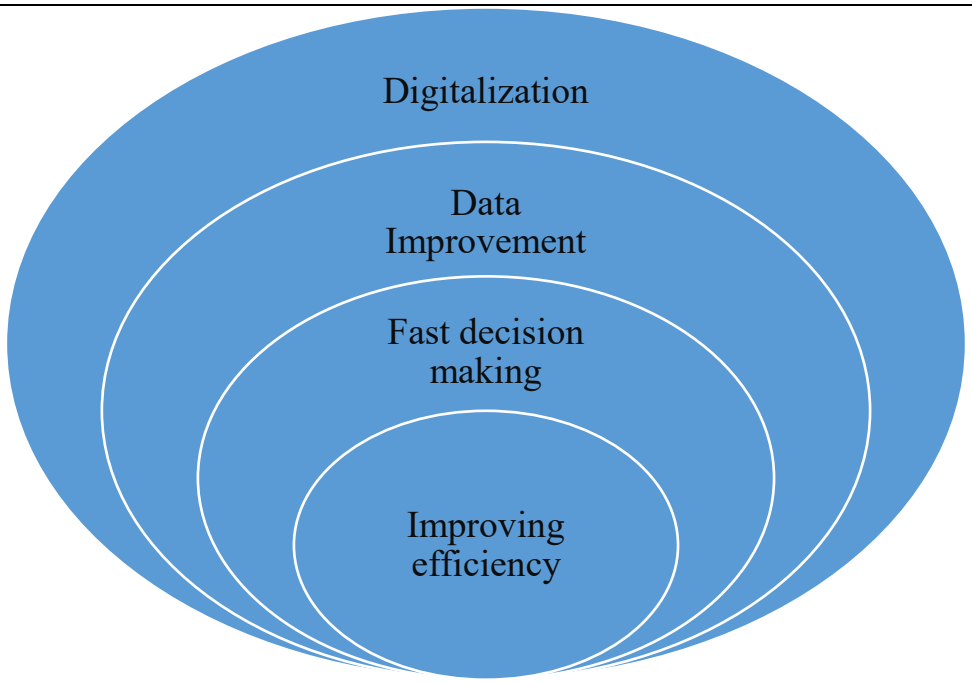

Figure 2. The impact of digitalization on the efficiency of HR processes[6]

The end result of this process is increased efficiency in HR processes, including talent management, career development planning, motivation, and performance assessment. Thus, digitalization serves not only as an automation tool but also as a strategic factor influencing the quality of human resources management[7].

The primary goal of their implementation is to improve the efficiency of human capital management and ensure the sustainable development of educational institutions. An analysis of international literature shows that the implementation of artificial intelligence technologies, cloud platforms, and analytical tools can improve decision-making in HR.

3. Methodological aspects of the research.

The study's methodological framework includes a systems analysis, a comprehensive literature review, a comparative analysis of domestic and international practices, and an analysis of HR digitalization practices in higher education institutions. Data from scientific publications, analytical reports, and empirical studies on the digitalization of HR processes were used, ensuring both theoretical and practical validity of the findings.

4. Foreign experience of the research.

Internationally, digitalization of HR functions is being actively implemented across all sectors, including higher education. For example, an analysis of German experience shows that large educational organizations are using digital tools to speed up recruiting, improve the accuracy of personnel assessments, and enhance strategic HR decision-making[8]. However, barriers remain, such as a shortage of qualified specialists and the high cost of implementing resources.

[6]Compiled by the author.

[7] Parry, Emma, and Shaun Tyson. "Desired Strategic Human Resource Management Practices during Organizational Change: HR Professionals' Perspectives." Journal of Change Management, vol. 11, no. 1, 2011, pp. 1–18.

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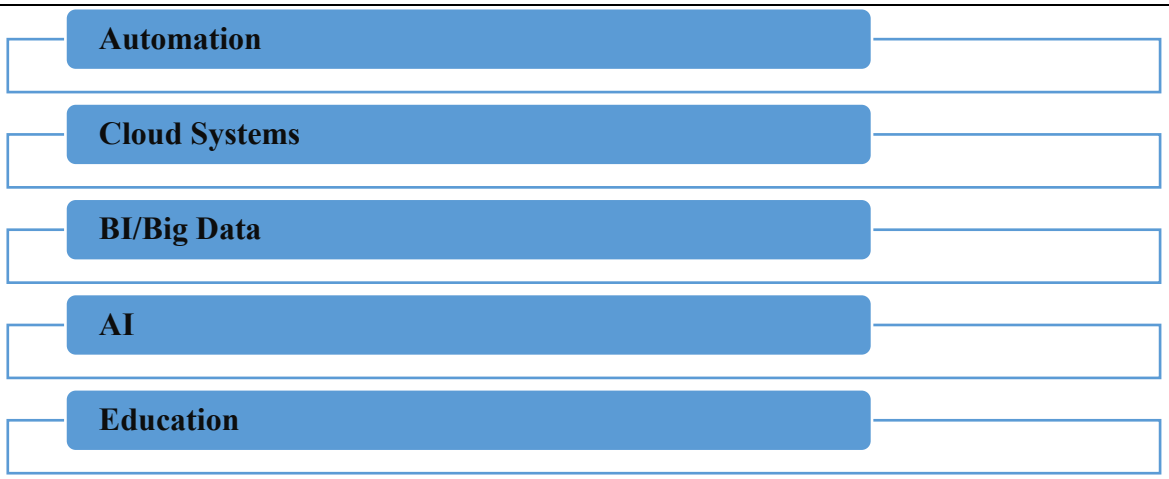

Figure 3. Key digital HR tools and their functions[9]

Other international studies also highlight the importance of using big data analytics, cloud platforms and artificial intelligence to optimize HR processes and ensure competitive advantage.

Internationally, the digitalization of HR functions has become a strategic priority across multiple sectors, including higher education institutions (HEIs). Universities in developed economies increasingly adopt digital HR ecosystems that integrate recruitment, performance management, professional development, payroll, and analytics into unified platforms. These systems are not only administrative tools but also instruments of strategic governance and institutional competitiveness.

For example, in **Germany**, universities actively implement e-HRM solutions and integrated Human Resource Information Systems (HRIS). Large public universities use digital platforms to automate vacancy announcements, applicant tracking, online interviews, and competency-based selection procedures. Artificial intelligence–supported tools are applied to screen CVs, analyze candidate profiles, and predict potential performance outcomes. Additionally, digital performance appraisal systems enable continuous monitoring of academic staff productivity, including research outputs, teaching quality indicators, grant activity, and international collaboration metrics[10]. As a result, HR departments shift from administrative support units to strategic partners in university governance.

In the **United Kingdom**, universities implement advanced people analytics to support workforce planning and talent retention. Predictive analytics models are used to identify risks of staff turnover, evaluate workload distribution, and forecast future competency needs. Many institutions have adopted cloud-based HR platforms that integrate with learning management systems (LMS), allowing alignment between staff development programs and institutional strategic goals.

Similarly, in the **United States**, higher education institutions increasingly rely on enterprise-level HR software such as Workday and Oracle HCM. These systems enable real-time data processing, transparent reporting, and compliance management. Digital dashboards provide university leadership with key performance indicators (KPIs) related to faculty productivity, diversity metrics, and financial efficiency. Moreover, universities utilize digital learning platforms to support continuous professional development for academic and administrative staff.

Despite these advancements, international experience highlights several persistent challenges. First, the implementation of digital HR technologies requires significant financial investment, which may be difficult for smaller institutions or universities in developing economies. Second, there is often a shortage of qualified HR professionals with digital competencies and analytical skills[11]. Third, resistance to organizational change remains a critical barrier, particularly among academic staff who may perceive digital monitoring systems as restrictive or bureaucratic. Data security and privacy concerns also pose serious challenges, especially in relation to personal data protection regulations such as GDPR in European countries.

Foreign experience demonstrates that digital HR transformation in higher education contributes to improved transparency, efficiency, and strategic alignment. However, successful implementation requires not only technological infrastructure but also organizational readiness, leadership support, staff training, and a clear digital transformation strategy.

5. Analysis and results.

It should be noted that digital HR technologies include automated systems for personnel selection and onboarding; digital training and competency development modules; analytical platforms for monitoring labor performance; and accounting systems and digital employee databases.[12]These tools not only improve the efficiency of HR processes but also contribute to the development of HR analytics the practice of analyzing big data about employees to forecast staffing needs and talent management strategies.

The benefits of HR digitalization include[13]:

[9]Prepared by the author.
[10] Al Ariss, Akram, et al. "Talent Management: Current Theories and Future Research Directions." Journal of World Business, vol. 49, no. 2, 2014, pp. 173–179.
[11] Lepak, David P., and Scott A. Snell. "Examining the Human Resource Architecture: The Relationships among Human Capital, Employment, and Firm Performance." Journal of Management, vol. 28, no. 4, 2002, pp. 517–543.
[12]Abdumannofova MF Trends in the Use of Digital Technologies... Labor Economics and Human Capital, 2024.
[13]A Review of Digital Human Resource Management... LUMIN Appl. Sci. Eng., 2025.

– acceleration of recruitment and selection of candidates;

– improving the quality of adaptation of new employees;

– increasing staff productivity;

– improving the accuracy of data-driven decision making;

– improving KPI monitoring.

At the same time, there are risks and limitations associated with employee resistance to change, a lack of IT skills, and the need to invest in infrastructure and data protection.

Conclusion.

Digital HR technologies play a decisive role in enhancing the efficiency, transparency, and strategic orientation of human resource management in higher education institutions. The integration of digital tools such as Human Resource Information Systems (HRIS), e-recruitment platforms, performance analytics, and cloud-based solutions allows universities to optimize recruitment procedures, reduce administrative workload, and ensure greater objectivity in personnel evaluation. Automated data processing and real-time analytics contribute to evidence-based decision-making, enabling university leadership to align HR policies with institutional development strategies.

Furthermore, digitalization creates favorable conditions for continuous professional development and competency management. Through digital learning platforms and performance tracking systems, higher education institutions can identify skill gaps, design targeted training programs, and monitor academic productivity more effectively. This contributes not only to improving individual staff performance but also to strengthening the overall competitiveness and innovation capacity of universities.

At the same time, the implementation of digital HR technologies is associated with several challenges. These include financial constraints, insufficient digital competencies among HR specialists, resistance to organizational change, and concerns related to data security and privacy protection. Therefore, successful digital transformation requires comprehensive strategic planning, leadership support, investment in staff training, and the development of a strong digital culture within the institution.

In conclusion, despite existing barriers, the digitalization of HR processes is becoming a strategic imperative for the sustainable development of higher education systems. Institutions that effectively integrate digital HR technologies gain long-term advantages in operational efficiency, talent management, and institutional resilience in an increasingly competitive and technology-driven educational environment.

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GEOLOGICAL AND MINERALOGICAL SCIENCES

STRUCTURAL CONTROL ON GROUNDWATER PRODUCTIVITY IN A TECTONICALLY COMPLEX MINING AREA: THE AKSSU–ZHOLYMBET CASE STUDY

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Abstract

Groundwater productivity in mining areas often shows strong spatial heterogeneity that cannot be explained only by borehole depth or lithology. This complicates hydrogeological assessment, dewatering design, and water management at mine sites. This study evaluates structural control on groundwater productivity using the Akssu–Zholymbet mining area (Northern Kazakhstan) as a case study. The analysis uses data from sixteen hydrogeological boreholes (23–120 m), including pumping test results, static water levels, and borehole spatial distribution. Discharge values range from 0.1 to 20.0 L/s, including boreholes of similar depth located close to each other. No clear relationship between depth and discharge is observed, suggesting that depth-based productivity criteria are limited in the studied conditions. The variability is interpreted as an effect of structural heterogeneity, where faults and fracture zones provide preferential groundwater flow pathways. The results may support improved inflow prediction and more robust dewatering design in structurally complex mining settings.

Keywords: groundwater productivity; fractured aquifer; faults; structural control; pumping test; mine dewatering; Akssu–Zholymbet; Northern Kazakhstan.

Introduction

Hydrogeological conditions in mining areas are characterized by high spatial heterogeneity and complex groundwater flow structures, which significantly complicate the assessment of groundwater inflows, the design of dewatering systems, and groundwater resource management. In both open-pit and underground mining, groundwater flow is controlled by a combination of natural and anthropogenic factors, including lithological composition, tectonic disturbance of the rock mass, fracture intensity, and stress changes induced by mining activities[1,3,6,11].

One of the key features of hydrogeological systems in mining areas is the pronounced variability of groundwater productivity. Numerous studies show that boreholes drilled to similar depths within the same mining site may exhibit discharge differences of one to two orders of magnitude[2,7]. Such variability indicates the limited applicability of simplified depth-oriented approaches, in which drilling depth is considered the primary indicator of groundwater potential.

In tectonically complex areas composed mainly of fractured and fractured–porous aquifers, groundwater flow is primarily controlled by secondary permeability associated with faults, fracture zones, and fracture networks. These structural elements form preferential flow paths that localize groundwater flow within zones of limited thickness but high permeability [5,9]. As a result, borehole depth ceases to be a reliable indicator of productivity, and groundwater inflows exhibit a distinctly heterogeneous pattern.

Structural control is particularly pronounced in mining areas located within structural–metallogenic zones. Such zones are typically characterized by intense tectonic disturbance and well-developed fracture systems related to both regional faults and local structures associated with ore-forming processes. Under these conditions, structural elements exert a dominant influence on the distribution of hydraulic properties and the formation of high-productivity groundwater zones[6,10].

The relevance of studying structural control on groundwater productivity is confirmed by field hydrogeological investigations conducted in the Akssu–Zholymbet mining area. Based on drilling and pumping test data from sixteen hydrogeological boreholes with depths ranging from 23 to 120 m, discharge values were found to vary from 0.1 to 20.0 L/s, including boreholes of comparable depth located in close proximity. The absence of a clear relationship between borehole depth and discharge indicates the dominant role of structural factors over depth and lithological parameters.

The objective of this study is to assess the role of structural factors in controlling groundwater productivity in the Akssu–Zholymbet mining area based on drilling and pumping test data.

The specific tasks of the study include:

– analysis of the relationship between borehole depth and discharge;

– assessment of the spatial variability of groundwater productivity;

– comparison of hydrogeological characteristics between the North and South pits;

– interpretation of observed patterns considering the structural and tectonic features of the area.

The results aim to substantiate the leading role of structural control in groundwater flow formation and can be applied in hydrogeological investigations and dewatering system design in structurally complex mining areas.

Literature Review

Recent studies of hydrogeological conditions in mining areas increasingly emphasize the key role of structural factors in controlling groundwater flow and aquifer productivity. In contrast to classical models assuming relatively homogeneous vertical distributions of hydraulic properties, contemporary research demonstrates that in fractured and tectonically disturbed rock masses, groundwater flow is governed primarily by secondary permeability associated with faults and fracture systems.

Several recent studies show that borehole discharge variability in mining areas can reach one to two orders of magnitude even at comparable drilling depths. For example, Różkowski et al. [11], based on an open-pit mine case study, demonstrated that groundwater inflow distribution is controlled not by the depth of aquifer interception but by the spatial configuration of high-permeability zones associated with tectonic structures. Similar conclusions were drawn by Ca and Laar [2], who highlighted the limitations of depth-based approaches in groundwater inflow prediction and mine water management.

Considerable attention has been paid to methods for identifying and quantitatively assessing structural control on groundwater flow. The application of geophysical methods, including electrical resistivity tomography, aeromagnetic, and electromagnetic surveys, enables the detection of fracture zones and high-permeability pathways that play a decisive role in groundwater productivity. It has been demonstrated that electrical resistivity tomography significantly improves the assessment of spatial groundwater heterogeneity in fractured aquifers [7]. More recent studies by [6] confirmed the effectiveness of integrating ground-based geophysical methods for characterizing near-surface aquifers within active mining sites.

Advances in numerical and analytical modeling also reflect a shift from simplified depth-based criteria toward explicit consideration of structural heterogeneity [4]. Modern groundwater flow models in fractured media incorporate parameters describing fracture network connectivity, permeability anisotropy, and stress-dependent behavior. Preisig et al. [10] established the basis for regional flow modeling in fractured aquifers accounting for stress conditions, while later studies [4,12] further developed these approaches and emphasized the necessity of comprehensive structural characterization.

Structural control is particularly significant in areas associated with structural–metallogenic zones, where ore-forming processes are accompanied by intense tectonic deformation. Such zones often coincide with areas of increased hydraulic conductivity and localized groundwater inflows, which is critical for mine hydrogeological assessment and inflow risk management [6,8].

However, despite these advances, field-based evidence from structurally metallogenic zones remains limited, particularly with respect to quantitative assessment of groundwater productivity variability at the scale of active mining operations.

Materials and Methods

The study is based on the results of field hydrogeological investigations conducted within the Akssu–Zholymbet mining area. The dataset includes drilling and operational data from sixteen hydrogeological boreholes located in the North and South pits. Borehole depths range from 23 to 120 m, covering the upper and middle portions of the aquifer system within the studied rock mass.

The locations of the hydrogeological boreholes in the North and South pits are illustrated in Fig. 1.

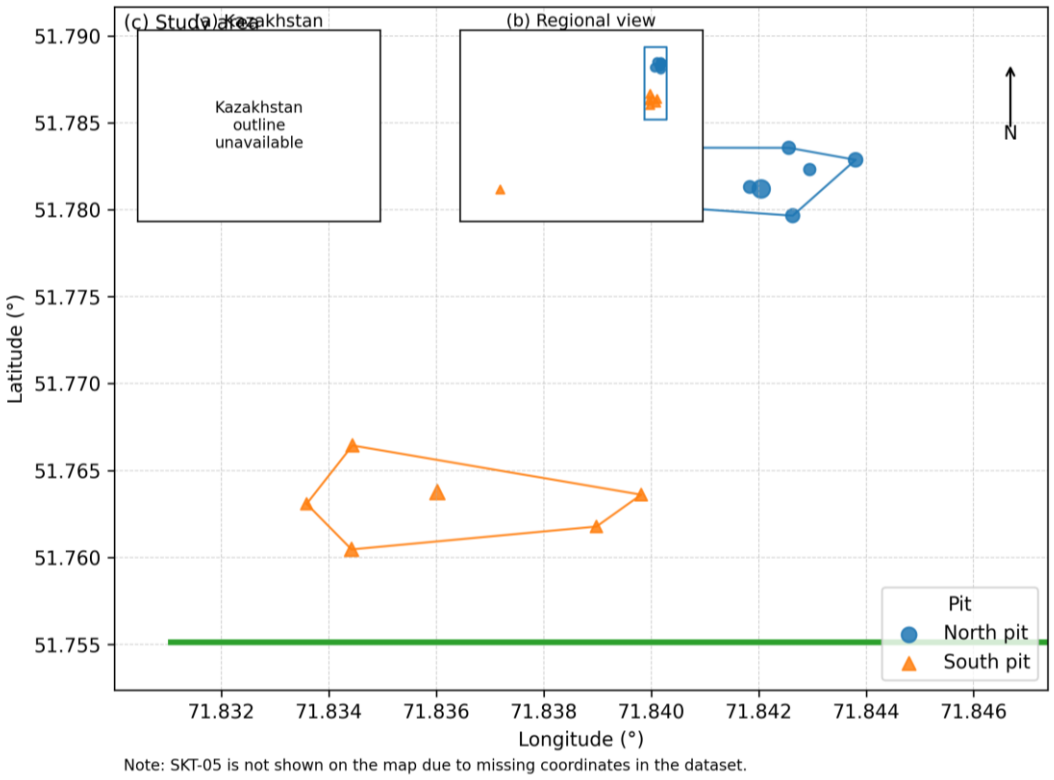

Figure 1. Location of the Akssu–Zholymbet mining area showing the distribution of hydrogeological boreholes within the North and South pits

For each borehole, data on design and actual depth, casing and screen construction, static groundwater levels, and results of trial and pumping tests were used. Additional information included borehole spatial coordinates and results of limited hydrochemical analyses of groundwater samples.

Drilling Methods and Borehole Construction

Hydrogeological boreholes were drilled using standard techniques applied in engineering and hydrogeological investigations under open-pit mining conditions. Casing pipes with diameters of 127 and 159 mm were used depending on design conditions and expected productivity. Borehole construction included screened intervals positioned within inferred water-bearing and fractured zones.

Actual borehole depths generally corresponded to design values, ensuring data comparability. Screen placement was guided by lithological logs and observed indications of increased fracturing during drilling.

Pumping Tests

Groundwater productivity was assessed through trial and pumping tests conducted to determine borehole discharge, groundwater level response, and preliminary hydraulic properties of the rock mass. Measured discharge values ranged from 0.1 to 20.0 L/s, reflecting pronounced spatial heterogeneity. Static groundwater levels were recorded prior to pumping and used for comparative analysis between different parts of the mining area.

Hydrochemical Analysis

Groundwater samples were collected from all boreholes for limited chemical analysis. The hydrochemical data were used to characterize groundwater composition and assess genetic uniformity within the study area. The results showed no pronounced hydrochemical anomalies that could explain the observed discharge variability, allowing the analysis to focus on structural and hydrodynamic factors.

Spatial and Comparative Analysis

Comparative and spatial analyses were applied to assess the influence of structural factors on groundwater productivity. Relationships between borehole depth and discharge were evaluated, as well as differences in productivity between the North and South pits. Particular attention was paid to cases of significant discharge variability at comparable depths and close spatial proximity.

Correlation analysis was used to test for statistical relationships between borehole depth and discharge. The absence of a stable correlation was interpreted as evidence of dominant structural control over depth-related and lithological factors.

Interpretation Approach

Result interpretation is based on the concept of structurally controlled groundwater flow, whereby aquifer productivity in fractured and tectonically disturbed rock masses is governed by the configuration of faults, fracture zones, and their hydraulic connectivity. Hydrogeological data were compared with the general structural–tectonic setting of the area to qualitatively assess the role of structural elements in forming zones of increased or reduced groundwater productivity.

Results

Analysis of drilling and pumping test data from the Akssu–Zholymbet mining area yielded hydrogeological information for sixteen boreholes located within the North and South pits. Borehole depths range from

23 to 120 m, and actual depths generally correspond to design values.

Static groundwater levels range from 13.1 to 24.6 m, indicating relatively similar hydrodynamic conditions across the study area. Despite this, borehole discharge values show high variability.

Pumping test results indicate discharge values ranging from 0.1 to 20.0 L/s. The highest discharges were recorded in individual boreholes in both pits, while several boreholes exhibit minimal inflows at comparable depths.

Notably, boreholes drilled to depths of 60–100 m show discharge differences of one to two orders of magnitude, indicating strong spatial heterogeneity of aquifer properties and the absence of a direct depth–productivity relationship.

Comparison of discharge values with borehole depths shows no consistent linear or monotonic relationship. In several cases, shallow boreholes exhibit higher discharges than deeper ones, confirming the limited applicability of depth-based productivity criteria.

Comparative analysis between the North and South pits reveals differences in discharge ranges and hydrodynamic characteristics. In the North pit, both high- and low-discharge boreholes occur at similar depths, indicating strong local heterogeneity. A similar pattern is observed in the South pit, although discharge values tend to cluster within moderate ranges, with isolated high-discharge anomalies.

Hydrochemical analysis indicates relative compositional uniformity of groundwater across the study area. No chemical anomalies were identified that could account for the observed discharge variability.

The main hydrogeological parameters of the boreholes, including depth, discharge, and static water level, are summarized in Table 1.

Table 1.

Summary of borehole depth, discharge and static water levels

Borehole ID	Pit	Depth (m)	Static water level (m)	Discharge Q (L/s)
SKT-01	North	120.0	22.47	5.5
SKT-04	North	120.0	21.25	0.8
SKT-11	North	60.0	21.10	1.8
SKT-01n	North	80.0	22.71	0.5
SKT-02	North	91.3	18.49	3.7
SKT-08	North	91.0	23.13	1.5
SKT-10	North	90.0	17.06	0.1
SKT-03	North	87.0	22.01	0.1
SKT-06	South	78.0	20.95	0.89
SKT-07	South	90.0	24.57	0.25
SKT-12	South	61.0	18.36	0.1
SKT-14	South	80.0	24.03	0.4
SKT-09	South	60.0	13.07	2.56
SKT-13	South	51.7	17.61	1.6
SKT-05	South	23.0	–	–
HDR-12-1	South	77.0	–	20.0

Notes:
– "–" indicates unavailable measurements.
– Borehole depths correspond to actual drilled depths.
– Discharge values obtained from trial and pumping tests.

Figure 2 illustrates the absence of a clear relationship between borehole depth and discharge.

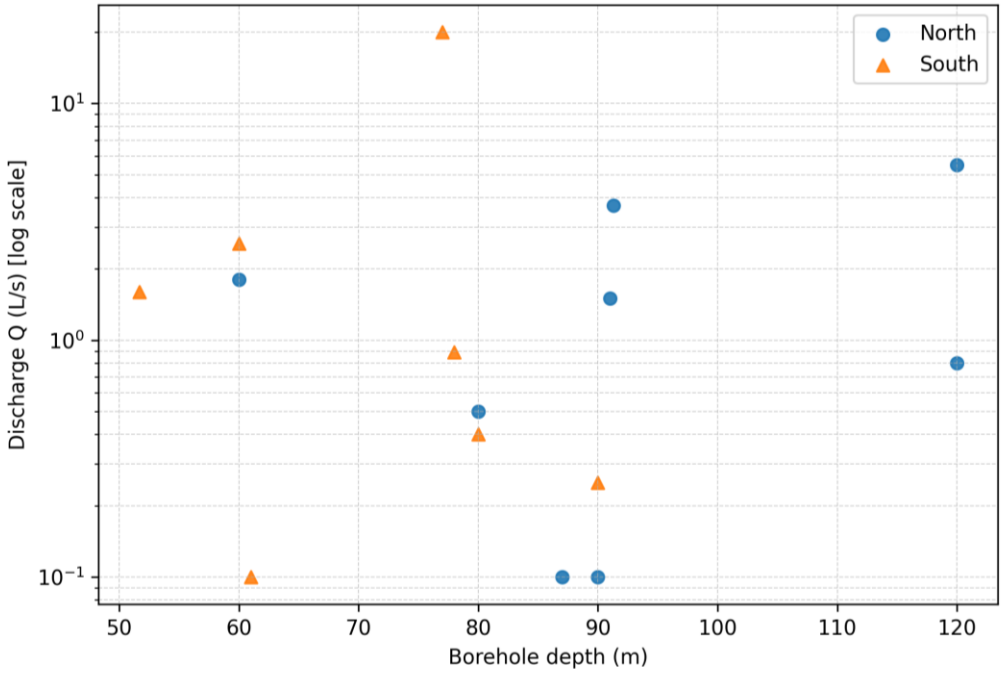

Figure 2 — Q–Depth (Discharge vs depth)

Figure 3 highlights the pronounced spatial heterogeneity of groundwater discharge within the study area.

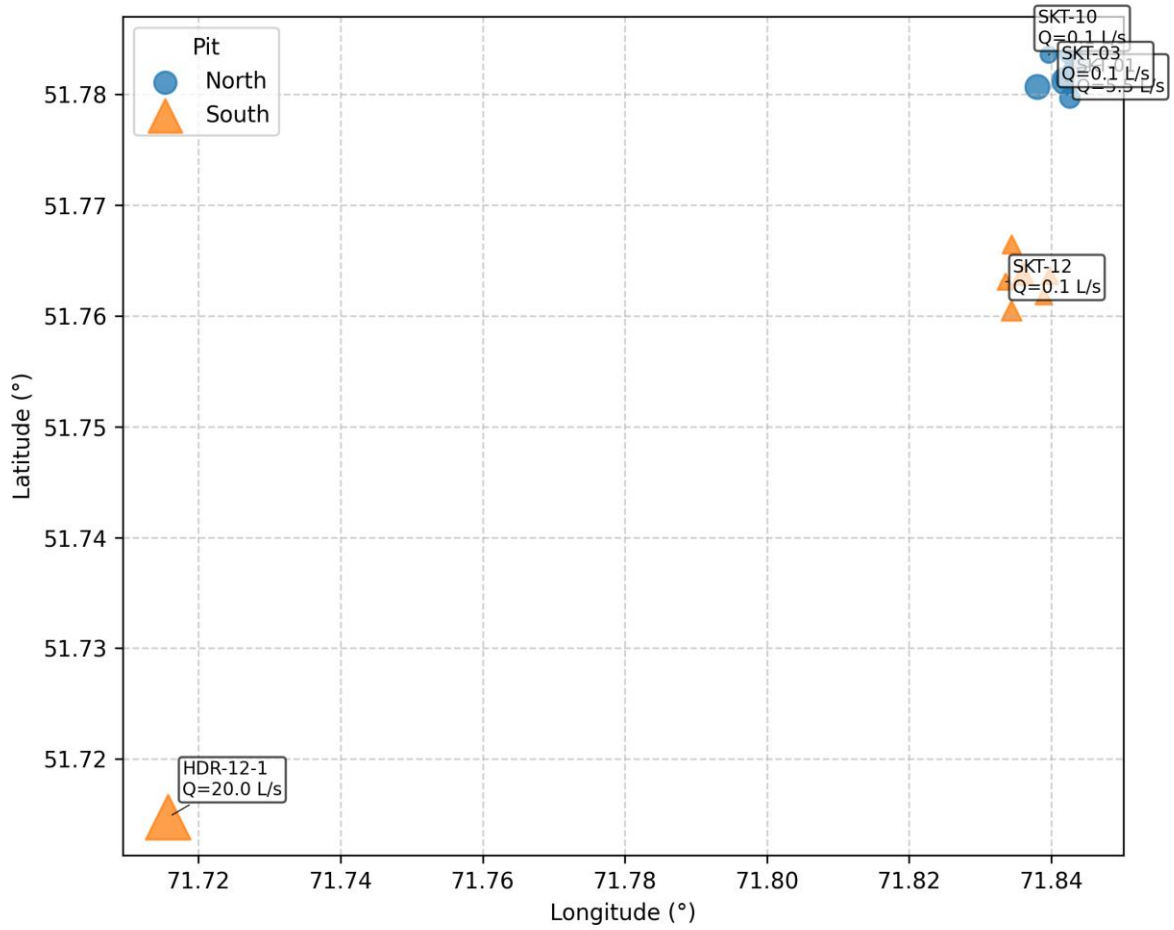

Figure 3 - Spatial distribution of groundwater discharge (annotated extremes)

These results provide an empirical basis for the subsequent discussion of the role of structural factors in controlling groundwater productivity in the Akssu–Zholymbet mining area.

The conceptual representation of structurally controlled groundwater flow is shown in Figure 4.

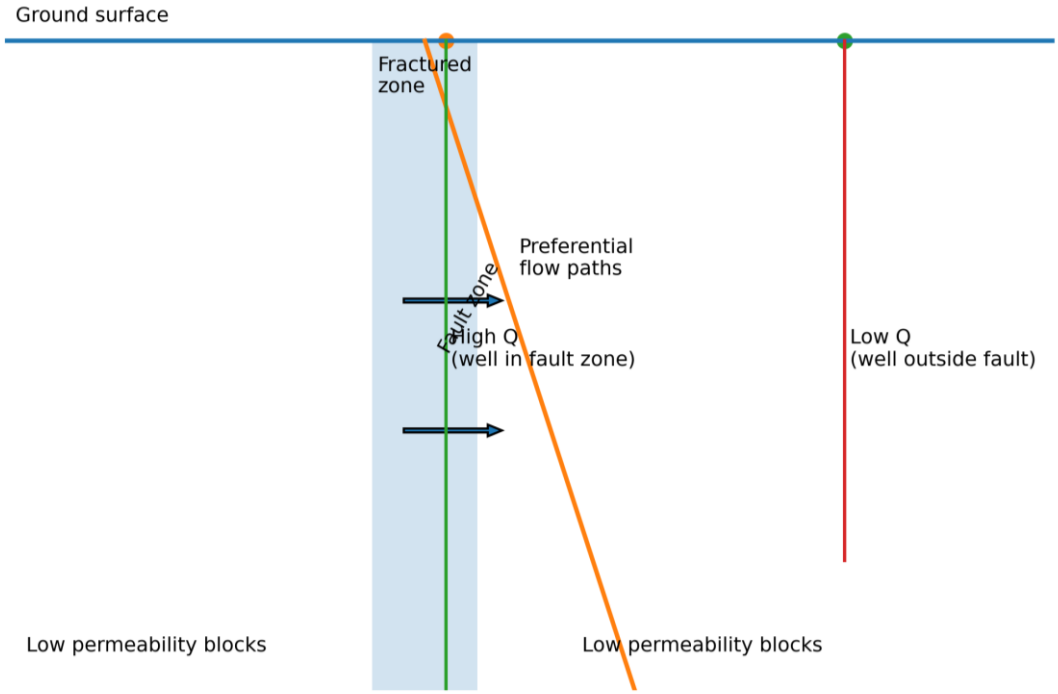

Figure 4 - Conceptual model of structurally controlled groundwater flow

The drilling timeline of the hydrogeological boreholes during 2025–2026 is shown in Fig. 5.

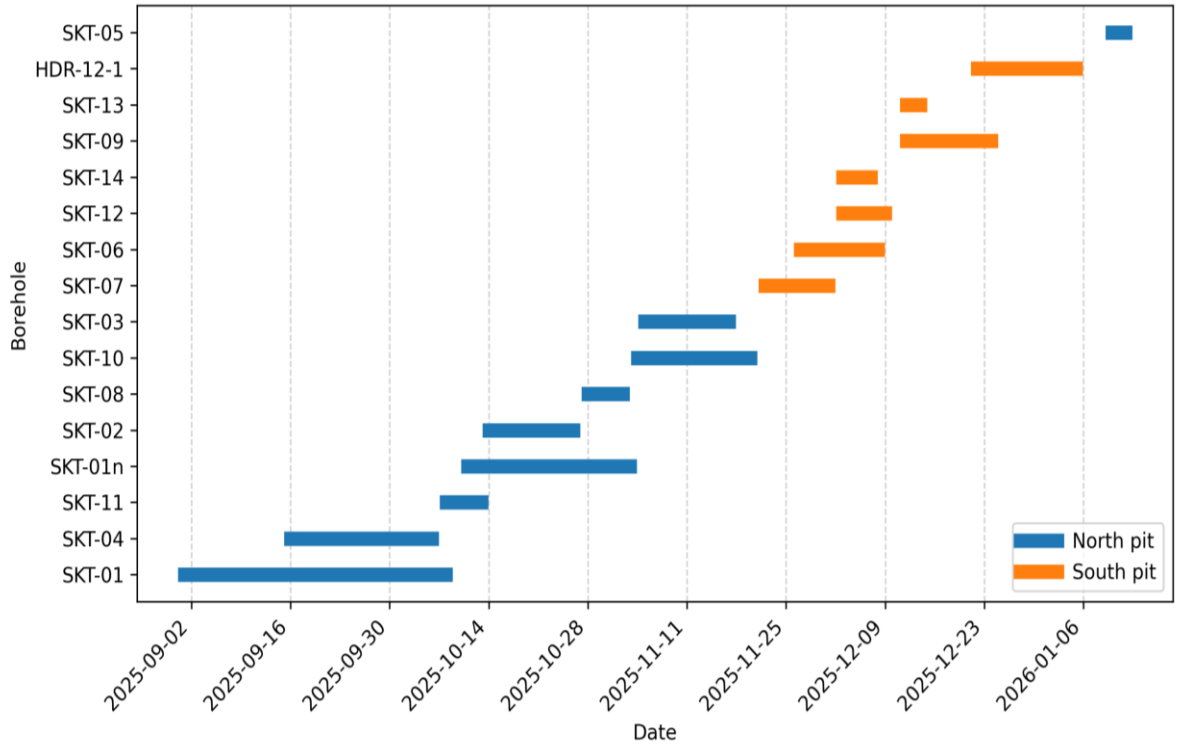

Figure 5 - Drilling timeline of boreholes (2025–2026)

Discussion

The results clearly demonstrate that groundwater productivity in the Akssu–Zholymbet mining area is not controlled by borehole depth. This is evident from the discharge–depth relationship (Fig. 2), where discharge values vary from 0.1 to 20.0 L/s at comparable depths between 50 and 120 m. The absence of a clear correlation indicates the limited applicability of depth-oriented hydrogeological approaches.

Such behavior is typical of tectonically disturbed and fractured rock masses, where groundwater flow is controlled by secondary permeability rather than stratigraphic position. Boreholes intersecting fracture zones or faults exhibit significantly higher discharges than nearby boreholes of similar depth located outside these structures.

The spatial distribution of discharge values (Fig. 3) highlights a pronounced mosaic pattern of groundwater productivity. Boreholes located in close proximity show sharply contrasting discharge values, excluding regional hydrodynamic conditions as the sole explanation.

Localized high-productivity zones, such as borehole HDR-12-1 with a discharge of 20.0 L/s, indicate the presence of structurally controlled flow paths likely associated with fault zones or areas of intense fracturing. Similar patterns are observed in the North pit, where discharge values vary by one to two orders of magnitude at depths of 90–120 m.

Comparison between the North and South pits shows that both areas exhibit high spatial heterogeneity, although the distribution and intensity of high-discharge zones differ. These differences may reflect variations in fault density, orientation, and the degree of mining-induced disturbance.

The findings have important practical implications. First, reliance on borehole depth as the primary predictor of groundwater inflow may lead to significant errors. Second, the observed heterogeneity underscores the need for detailed structural analysis in dewatering system design.

Limitations and Future Research

The interpretation of structural control in this study is primarily qualitative and based on spatial analysis of borehole depth and discharge. Future research should incorporate detailed structural–geological mapping, geophysical investigations, and numerical groundwater flow modeling to quantitatively assess the contribution of individual fault and fracture systems.

Conclusion

Analysis of data from sixteen hydrogeological boreholes in the Akssu–Zholymbet mining area shows high spatial variability in groundwater productivity, with discharge values ranging from 0.1 to 20.0 L/s at comparable depths.

The absence of a clear depth–discharge relationship (Fig. 2) demonstrates the limited applicability of depth-based hydrogeological approaches in tectonically disturbed rock masses.

Spatial analysis (Fig. 3) reveals localized high-productivity zones, indicating the dominant role of structural factors such as faults and fracture zones.

Both the North and South pits exhibit mosaic patterns of groundwater productivity, reflecting structural heterogeneity.

The results highlight the need for integrated approaches combining drilling data, pumping tests, and spatial analysis in mine dewatering design.

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PHILOLOGICAL SCIENCES

AN ARTISTIC–PHILOSOPHICAL ANALYSIS OF THE LEADERSHIP PHENOMENON IN THE PROSE OF SHEVKET SURAYYA AYDEMIR

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Abstract

This study examines the artistic-biographical works of Shevket Surayya Aydemir within the broader context of Turkey's modernization process, focusing on the relationship between leadership, historical transformation, and sociological necessity. The research analyzes Aydemir's major works The Single Man, The Second Man, and The Drama of Menderes as intellectual narratives reflecting three critical stages in the development of the Turkish Republic: state formation, institutional consolidation, and democratic transition.

Employing a qualitative and interpretative methodological framework grounded in sociological and historiographical analysis, the study explores how Aydemir reconstructs historical personalities not merely as political actors but as manifestations of historical agency emerging from specific socio-economic conditions. Particular attention is devoted to the dialectical relationship between leader and masses, as well as the interaction between historical determinism and individual will in shaping political transformation.

The findings demonstrate that Aydemir transcends conventional biography by developing a hybrid literary-historical model in which leadership functions simultaneously as a sociological necessity and an existential responsibility. Through the representations of Mustafa Kemal Ataturk, İsmet Inonu, and Adnan Menderes, Aydemir presents modernization as a dynamic process shaped by both structural forces and individual decision-making.

Ultimately, the study argues that Aydemir's biographical prose constitutes not only a literary achievement but also a significant theoretical framework for understanding leadership and modernization within twentieth-century political history.

Keywords: Shevket Surayya Aydemir, Leadership Phenomenon, Turkish Modernization, Biographical Novel, Ataturk, Inonu, Menderes, Leader–Mass Relations, Sociological Analysis, Republican Turkey.

INTRODUCTION: Shevket Surayya Aydemir is one of the most exceptional figures in 20th-century Turkish intellectual history, sociological thought, and biographical prose. His body of work represents a unique "interdisciplinary" phenomenon situated at the intersection of not only literature but also political philosophy and historiography. It is impossible to conceive of Aydemir's legacy apart from the epic of Turkey's modernization, as he served as a witness, a documentary chronicler, and one of its primary ideological architects. The Kadro journal, which the author led during the 1930s, was a profound effort to scientifically justify the socio-economic foundation of the Republic of Turkey [Aydemir, 1932, p. 3].

The ideological explorations that began during that era subsequently evolved into the artistic reflection of historical figures within his literary work—monumental biographical trilogies that depict individual lives in total unity with the destiny of the nation. The methodology applied by Aydemir elevated the genre of biography in Turkish literature from a mere "life story" to the level of the "biographical novel," providing a sociological portrait and philosophical analysis of an entire era [Tekin, 2010, p. 42]. The author's legacy in this field is regarded as the most authoritative source for the artistic presentation of historical figures from the Republican period.

Aydemir's significance in historiography stems from his perception of history not as a "collection of frozen facts," but as a "living process". Although he adopted the materialist determinism of history under the influence of his education at the Communist University of the Toilers of the East (KUTV) in Moscow, he synthesized this perspective with the decisive role of the individual within the specific realities of the Kemalist revolution. For Aydemir, historical figures are not mere heroic myths; they are the subjective manifestations of sociological necessity. For example, in his work The One Man (Tək adam), while describing Mustafa Kamal Ataturk, he notes: "A nation materializes its internal energy through the will of the leader" [Aydemir, 1963, VOL. I, p.18].

This approach serves to reveal the inner spirit and psychological layers of historical events, moving away from the positivist methods traditional to historiography. Aydemir's biographical novels are accepted by academic circles in Turkey as serious documentary sources and are read by a wide audience as "artistic textbooks" of Republican history. In his work, historical figures (Ataturk, Inonu, Menderes, etc.) are not just figures found in official protocols; they are living characters portrayed with all their human weaknesses, hesitations, and historical determination.

It is this characteristic that propelled Aydemir's legacy to the peak of documentary prose in Turkish literature the form of the "historical-biographical novel" [Ergun, 1995, p. 115]. An essential point to emphasize in this introduction is the chronological and logical sequence of Aydemir's biographical output. Through The One Man (Tək adam) series, the author reflected the "establishment" phase of the modern state; through The

Second Man (İkinci adam), he captured the institutionalization and protection phase of that state [Aydemir, 1966, Vol. I, p. 12]; and through Menderes's Drama (Menderesin dramı), he depicted the period of "democratic trials" in the transition to a multi-party system [Aydemir, 1969, p. 15].

This trilogy (and other biographies added to them) is essentially a reading of a nation's sociological evolution through its leaders across three distinct stages. For Aydemir, the leader also serves as a means of the nation's "self-recognition". From the perspective of literary studies, Aydemir's language, epic descriptive ability, and artistic metaphors such as the "man seeking water" metaphor place him among the masters of 20th-century Turkish prose. Investigating his works reveals that Shevket Surayya Aydemir's creativity is a supreme intellectual treasure that, with both a historian's precision and a writer's sensitivity, has etched the Republican era into our collective artistic memory.

Theoretical Foundations of the Leadership Phenomenon: The Concept of Leadership in Political and Philosophical Contexts.

In Şavkat Surayya Aydemir's artistic-biographical works, the leadership phenomenon is not merely a political management technique, a military tactic, or the temporary activity of an individual at the top of a state hierarchy. Instead, it is a fundamental phenomenon emerging at the complex and sometimes sharp dialectical intersection of history's internal driving forces, sociological necessities, and individual will. The roots of the author's theoretical views on this subject lie in the grand intellectual quests he described through his own biography in the work The Man Seeking Water specifically his revolutionary experience in Russia, lessons in Marxism-Leninism, and the sociological realities of Anatolia [Aydemir, 1959, p. 11]. According to Aydemir, a leader is not a miracle fallen from the sky or a "superhero" outside of history; he is an absolute necessity born of the land, the nation, and the era. The author claims that every leader is actually a product of the sociological and economic crises of their time, and their mission is to direct the accumulated but not yet exploded energy within the inner layers of society toward the correct objective.

This will is presented in Aydemir's prose as the intersection of historical objective necessity and the subjective genius of the individual. The backbone of Aydemir's leadership philosophy is formed by the "Plan" and "Conscious Minority" theory justified in his theoretical articles in the Kadro journal [Kadro, 1932, № 1, p. 3]. He emphasizes that the success of a revolution is possible not just through the movement of the masses, but through the existence of an organized leadership and a leader who manages that movement with scientific principles. For the author, leadership is not just "commanding," but an engineering activity that knows "where history comes from and where it is going". According to Aydemir, the leaders of the Republican era are individuals who transformed the tasks of economic independence and modernization imposed by history into their own individual goals.

This view brings him closer to the Hegelian concept of the "world-historical individual"; according to Hegel, such individuals are the tools chosen by the "absolute spirit" of history to realize itself (Hegel, 1953, p. 45). However, Aydemir synthesizes this concept with Marxist materialism, seeing the source of a leader's power in their connection with the sociological base of the people. The theoretical explanations provided by the author in the first volume of The One Man [Aydemir, 1963, Vol. I, p. 12] are fundamental to understanding the philosophical depth of the leadership phenomenon. He notes that "history sometimes creates such voids that only an unshakeable will can fill that void" [Aydemir, 1963, Vol. I, p. 15]. Aydemir describes the leader as a force born within this "historical void" who brings order to chaos. In his view, Mustafa Kamal Ataturk did not emerge by chance but appeared out of the objective need of history to fill the sociological vacuum created by a collapsing empire and to save the nation from extinction.

At this point, the leader is also an "aesthetic" being; he is the artist who draws the future face of the nation and gives it a new identity. Aydemir separates the leader's charisma from mysticism and bases it on rationality: "A leader's charisma lies in knowing more than everyone else and making bolder decisions than everyone else" [Aydemir, 1963, Vol. I, p. 145]. The sociological transformation of the leadership phenomenon is explored in Aydemir's work The Second Man from a completely different perspective—the prism of "institutionalization" [Aydemir, 1966, Vol. I, p. 15]. The author claims that if the founding leader (Ataturk) is the "fire" of the revolution, the second leader (Inonu) is the engineer-administrator who transforms that fire into efficient heat energy in the state furnace. In this philosophy, leadership is a phase of "taking a breath" and "protecting the system". This form of leadership in state sociology should be evaluated as a transition from charismatic legitimacy to rational-legal legitimacy [Weber, 1922, p. 248].

For the state to survive, leadership must transition from charisma to rationality the rule of laws and bureaucracy. His presentation of İsmət Inonu as an "administrative leader" is actually a sociological reaction necessary for the revolution to protect itself [Aydemir, 1966, Vol. I, p. 110]. This is the transition phase of the leadership phenomenon from "historical heroism" to "state rationality". While this approach shares similarities with the "great man who creates history" in Thomas Carlyle's theory (Carlyle, 1841, p. 12-15) , Aydemir strictly binds this genius to sociological necessities. Elements of "drama" and "tragedy" also occupy an important place in Aydemir's leadership philosophy, appearing most prominently in Menderes's Drama. The author analyzes the collision point between mass populism and the state structure. Through the character of Adnan Menderes, we see the contradiction between a leader submitting to the desires of the masses versus submitting to the "iron laws" of history [Aydemir, 1969, p. 210].

Calling Menderes's life a "drama" is based on the philosophy of a leader being destroyed by the very system he created or was part of. Aydemir shows that a leader sometimes becomes a prisoner of the sociological conditions of their time. This drama is the leader

coming to power with the love of his people but being left alone against the cold, institutional realities of the state [Aydemir, 1969, p. 450]. In leadership theory, this situation can be linked to Antonio Gramsci's theory of "organic intellectuals" and "hegemony" (Gramsci, 1971, p. 5-10). Ultimately, leadership in Shevket Surayya Aydemir's work is a unity of historical determinism, sociological analysis, and individual sacrifice. While explaining the leader with the "man seeking water" metaphor, he describes the leader as a martyr who devotes his life to digging the earth with his fingernails to find the "spring of life" (freedom, progress) that remains hidden in the nation's soul but lacks the courage to emerge [Aydemir, 1959, p. 55].

For the author, the leader is also a means of the nation's "self-recognition". In his biographical prose, the characters of the Republican era are not merely historical figures; they are examples of individual will tested in the sociological laboratory of Turkey's modernization history. The scientific precision of this theoretical base lies in Aydemir presenting each leader as a sociological product of their era and documenting the collective memory of the nation and the state mind. Leadership in Aydemir's philosophical system is also an existential loneliness; he notes that "at the moments of making great decisions, the leader is lonelier than anyone else" (Aydemir, 1963, Vol. I, p. 28). This loneliness is not weakness; on the contrary, it is a sublimity brought by seeing the future and taking responsibility. Aydemir's leadership philosophy also encompasses his unique sociological definition of "Leader and Mass" relations.

He emphasizes that the leader is not superior to or alien to the mass, but the highest concentration of the mass's own internal energy [Aydemir, 1963, Vol. I, p. 210]. According to Aydemir, the greatest genius of the leader is to rationalize the desires lying in the people's subconscious and turn them into a state goal. In this process, the leader also acts as a pedagogue; he educates the mass to raise it to the level of a "nation," instilling new symbols and a new world view. This is the most deeply explored theory of the founding philosophy of modern Turkey in artistic literature. In the second volume of The One Man, the author analyzes Ataturk's sociological and cultural revolutions as "the art of leadership" more than his military successes [Aydemir, 1965, Vol. II, p. 24]. He states that true leadership is transforming society not with the sword, but with the pen and ideas.

This approach overlaps with Aydemir's own life experience; he saw himself as a kind of "thought leader" and a sociologist of the revolution. This broad and comprehensive analysis of the leadership phenomenon is the main line connecting the internal logic of all Aydemir's biographical works. He shows that true success is achieved when the leader's will acts as a catalyst that accelerates the objective flow of history rather than opposing it. Otherwise, the leader's fate may end in a tragic conclusion as in Menderes's Drama [Aydemir, 1969, p. 312]. Thus, Aydemir's leadership theory is one of the rare intellectual systems that combines both the sociology of victory and the philosophy of tragedy. This system transforms Republican-era figures from static pages of history into a dynamic and always relevant artistic reality. These theoretical foundations also explain how Shevket Surayya Aydemir established a fine balance between "Historical Determinism" and "Human Will".

In his articles written at the end of the 1930s, he noted that "history is blind without a leader, and a leader is rootless without history" [Aydemir, 1934, Kadro, № 28, p. 14]. This maxim is the most concise and honest expression of his leadership philosophy. He also sees the leader as the voice of the nation's shared conscience. If the leader loses contact with the nation's spirit, his leadership turns into mere mechanical management, which according to Aydemir is not true leadership. The theory Aydemir applied while creating the images of Mustafa Kamal Ataturk, İsmət Inonu, and Adnan Menderes is actually a sociological X-ray of Turkey's modernization history. The writer confronts each leader with the specific crises of their era and describes their reactions to these crises as a "leadership test".

In this respect, Aydemir's theory is indispensable for starting the political and sociological leadership models of the future, not just the past. Combining the sociological, philosophical, and artistic aspects of the leadership phenomenon so broadly, Aydemir actually proves to us scientifically how a nation is built and what function the guiding will serves. This is the highest and deepest form of history's artistic reflection. Aydemir's methodology also includes the intellectual collision between the old world and the new world of Republican elites, as historian Feroz Ahmad notes [Ahmad, 1993, p. 65-70]. The writer describes every decision of a historical figure not just as a political act, but as a civilizational choice. For example, Ataturk's arrival in Ankara or İsmət Pasha's Lausanne negotiations gain a metaphysical sublimity in Aydemir's prose.

This sublimity arises from the leader identifying his fate with the nation's fate. According to Aydemir, a true leader must feel the suffering of the nation more deeply than anyone and manage to turn that suffering into a "creative energy". This philosophical approach is directly related to the analysis of "elite leadership" and "social transformation" found in sociologist Emre Kongar's work [Kongar, 1981, p. 112-118]. Aydemir's leader is an artist who places society before him like clay and gives it form, yet every move of this artist is based on the cold logic of history. Thus, Aydemir's work is not merely biography; it is the documentation of the ontological founding philosophy of the Republic of Turkey. The leader here is an architect who reads the nation's soul deeply and establishes the institutional framework it needs. This architecture manifests itself in various forms in the chaos of establishment (Ataturk), the discipline of protection (Inonu), and the enthusiasm of democracy (Menderes). Therefore, the leadership phenomenon acts as both the beginning and the end of history in Aydemir's prose. The theoretical analyses in this section show that Aydemir described Turkey's modernization history as a dialectical dance between the "will of great individuals" and "objective laws of history".

Mustafa Kemal Ataturk's Personality and the Idea of State-Building in the Work "The One Man" (Tek adam)

Shevket Surayya Aydemir's monumental work The One Man (Tek adam) is not merely an example of the biographical novel genre in Turkish literature and historiography. It is a sociological, psychological, and artistic epic depicting a whole nation's transition from the fragmented remains of a shattered empire to a modern, secular, and national state. In this work, the author presents Mustafa Kemal Ataturk not simply as a historical figure or a military commander, but as the central pillar of the artistic reflection of Republican-era historical personalities and as an absolute will changing the flow of history. Aydemir's artistic approach strictly avoids deifying Ataturk or transforming him into an inaccessible myth. On the contrary, by portraying the leader in a unity of sociological realities and human contradictions, he sees his grandeur not in supernatural powers, but in the ability to sense historical necessity earlier than anyone else and provide it with direction [Aydemir, 1963, v.I, p.12].

Starting from Mustafa Kemal's childhood years in Salonica, the writer explores through deep psychological analysis the metaphysical void created within him by his father's early death and how that void was later filled with love for the fatherland, a passion for establishing order, and a "savior" will. He notes that for little Mustafa, his father's death was not just a family tragedy, but also the first individual realization of the collapse of the old order [Aydemir, 1963, Vol. I, p. 42]. According to Aydemir, while Ataturk was still a young military student, he carried an unshakeable belief within him that order would absolutely triumph over chaos, and this belief was not limited to mere military discipline. It was a sociological perspective dictating that the outdated institutions of the empire would no longer survive and that the birth of a new national identity was inevitable [Aydemir, 1963, v.I, p. 145]. The author emphasizes that the years the young officer Mustafa Kemal spent in Damascus (Syria) served as a sociological laboratory of the empire for him. There, while founding the "Vatan ve Hürriyyət" (Motherland and Liberty) society, he was already dreaming not just of a military coup, but of a fundamental social transformation [Aydemir, 1963, Vol. I, p. 210].

The author's choice to name the work The One Man (Tək adam) does not symbolize political authoritarianism or a desire for individual power. Instead, this expression signifies the absolute ontological loneliness of the leader at the moment of decision-making and the passion for carrying the historical responsibility of an entire nation on his shoulders. Aydemir emphasizes that Mustafa Kemal, who landed in Samsun on May 19, 1919, was actually facing the heaviest "loneliness" of history. This was because he was the only will to set the future as a goal with the slogan "Either independence or death!" at a moment when everyone else had lost hope, and the Istanbul government and many intellectuals were seeking a mandate or protection [Aydemir, 1965, Vol. II, p. 18]. In this section, the writer artistically brings to life Hegel's concept of the "historical personality". Ataturk reaches a point where his individual fate completely identifies with the historical fate of Turkey, and every decision he makes becomes an absolute decree determining whether the nation will survive or not. While analyzing Ataturk's leadership, Aydemir particularly highlights his rationality and intellectual foundation. He portrays the leader as a strategist who maps out every step from the Battle of Sakarya to the Lausanne Conference—as precisely calculated moves on a chessboard, synthesizing his intuition with scientific knowledge [Aydemir, 1965, Vol. II, p. 210]. The author states that Ataturk's military genius was combined with his sociological intelligence. He "perfectly knew when to mobilize the internal forces of the people and when to stop them" [Aydemir, 1965, Vol. II, p. 315]. In the author's prose, Ataturk's charisma is not derived from a mystical source, but from his artistic reflection of leadership born of his deep analysis of Anatolia's sociological structure, the spirit of the peasant, the place of religion in society, and the technological superiority of Western civilization.

Regarding the idea of state-building, Aydemir paints a picture of Anatolia as a scene of "chaos". Emerging from war, with a collapsed economy, and fighting against illiteracy and disease, Anatolia is a material in Aydemir's prose, and Ataturk is the master engineer constructing a modern building from this material [Aydemir, 1966, v.III, p.54]. At this point, leadership is also presented as a "creative act". The proclamation of the Republic, the alphabet reform, legal reforms, and secularist principles are aestheticized by Aydemir not just as legal changes, but as a process of re-creating the face, spirit, and future outlook of a people. Aydemir emphasizes that while Ataturk acted with the principle of "for the people, despite the people," he was actually serving the long-term historical interests of the nation rather than the momentary desires of the masses. He was "the leader who did not drag the masses to a goal, but made the masses worthy of that goal" [Aydemir, 1966, v.III, p. 182].

The writer notes that Ataturk's secularism reform was not merely about separating from religion but an attempt to establish the absolute authority of reason and science [Aydemir, 1966, Vol. III, p. 245]. In The One Man (Tek adam), the leader figure is also a "Head Teacher" (Başöğretmen). When he stands before a chalkboard with chalk in hand, he is not just teaching a new alphabet; he is actually instilling a new worldview and a new fate into his nation [Aydemir, 1966, Vol. III, p. 288]. Ataturk's personality is also treated in Aydemir's prose within the context of an "existential drama". The leader's greatest drama is his love for his nation, yet being forced to take harsh and radical steps against it at times to lead that nation to a better future. Describing Ataturk's internal hesitations, his lonely nights at the Çankaya Mansion, and the moments of parting ways with old friends, Aydemir conveys the leader's "loneliness" to the reader with staggering reality [Aydemir, 1966, Vol. III, p. 340]. The author states that Ataturk's leadership also meant sacrificing his individual freedoms, family happiness, and comfort for the sake of the "national ideal". He became the Father of everyone, but had no home of his own. For him, Ataturk

is not only a victorious commander but also the greatest "transition period" hero of history, caught between the death of the old and the birth of the new.

In Aydemir's artistic-philosophical analysis, Ataturk's personality and the idea of state-building are an unshakeable unity, irreversibly turning the wheel of history toward modernism and rooted in the sociological realities of this land. Describing Ataturk's death, the writer presents it not as the death of a man, but as the institutionalization of an idea [Aydemir, 1966, Vol. III, p. 542]. Every reform of the leader is also an aesthetic change in Aydemir's eyes: the replacement of the fez with the hat and Arabic script with the Latin alphabet represents the nation's exit "from the dark Middle Ages into sunny modernism" [Aydemir, 1966, Vol. III, p. 412]. Aydemir emphasizes that the Republic established by Ataturk is not just a form of government, but an "attempt of the Turkish nation to prove itself at the level of civilization". Analyzing Ataturk's foreign policy through the principle of "Peace at home, peace in the world," the author proves that he was not just a Turkish leader, but a possessor of universal reason [Aydemir, 1966, Vol. III, p. 480].

Thus, by placing Ataturk at the summit as "The One Man" (Tək adam), Aydemir actually aestheticized the power of an entire nation focused on a single will and the miracle that power created in history. His prose teaches us that the leader does not only make decisions; he acts as both the conscience and the mind of the nation. Describing Ataturk, Aydemir also shows how he was in harmony with the ideals of the Kadro era. The leader is the chief mind who establishes and leads the "cadre" of the revolution [Aydemir, 1932, p. 10]. Thanks to this sociological depth, the work ceases to be a mere biography and becomes the artistic manifesto of Turkey's modernization theory. Ataturk's image comes to life in Aydemir's pen as both an unshakeable rock and a delicate heart that feels everyone's pain; he is both a strategist on the battlefield and a diplomat at the parliamentary podium [Aydemir, 1965, Vol. II, p. 412]. The author evaluates Ataturk's work Nutuk (The Great Speech) as history's greatest document of self-examination and reporting, aestheticizing it as the leader's sincere dialogue with his own nation. Thus, The One Man (Tək adam) is a perfect artistic X-ray of both a personality and an era.

Ismet Inonu: The Protector of the System and the Administrative Leader.

Shevket Surayya Aydemir's work The Second Man (İkinci adam) is a sociological novel and research piece that profoundly analyzes the transition of the leadership phenomenon from the "foundational" phase to the "institutionalization" phase in the history of Turkey's modernization. In this work, the author presents the image of İsmət Inonu not merely as Mustafa Kamal Ataturk's closest comrade-in-arms, but as the "sound mind" of the state and the "symbol of continuity". According to Aydemir, if Ataturk was the charismatic "fire" that created order out of chaos, İsmət Inonu was the engineer-administrator who prevented that fire from extinguishing and transformed it into efficient heat energy within the official institutions of the state. From the very first pages of the work, the writer emphasizes that being the "Second Man" does not mean simply "coming after the first"; rather, it is a different and sometimes heavier function that history places upon an individual's shoulders.

Aydemir filters Inonu's entire life path from his military career to his diplomatic struggle at the Lausanne Conference as the "epicization of patience and discipline". According to the author, the image of Inonu is the "defense line" of the Republic; he is the primary will ensuring that revolutionary innovations took root within the bureaucratic and legal apparatus after the period of mass enthusiasm ended. This is referenced in the first volume of the work: [Aydemir, 1966, Vol. I, p. 45]. While outlining Inonu's character, Aydemir presents those traits that differed from Ataturk his silence, his attention to detail, and his cautiousness as a "statesman aesthetics". In the sections describing the Lausanne negotiations, the author portrays Inonu as "the Wall": [Aydemir, 1966, Vol. I, p. 240]. He is depicted as a stubborn fighter who coolly faced all diplomatic attacks from the opposing side (Lord Curzon, etc.) without retreating a single step from the nation's rights.

For Aydemir, this stubbornness of Inonu was not just a personality trait, but the will of a nation emerging from defeat to stand tall before the world. The writer notes that while Ataturk's military genius was decisive in the Pitched Battles, Inonu's diplomatic and bureaucratic genius was equally vital for the recognition of the state at the negotiation table: [Aydemir, 1966, Vol. I, p. 258]. Here, leadership is no longer measured by the sword, but by the power of documents, clauses, and strategic silence. Aydemir's artistic language in this phase becomes more formal, heavier, and simultaneously more analytical, which perfectly harmonizes with the essence of the personality being described.

In the second volume of the work, the "Presidency and War Years" the most difficult test of leadership are analyzed. Aydemir aestheticizes the "neutrality diplomacy" Inonu conducted to keep Turkey out of the bloody conflict during World War II as one of the greatest strategic victories in history. The author emphasizes: "Inonu saved the future generations by protecting Turkey's youth from the flames of war": [Aydemir, 1967, Vol. II, p. 115]. In this section, leadership also carries the function of a "protective shield". While describing Inonu's inner world, Aydemir depicts the solitary hours spent before maps every night and the deep sense of responsibility behind every diplomatic note with such sensitivity that the reader physically feels the massive weight on the leader's shoulders. To the author, Inonu is the "wise architect" who prevented the foundations of the building Ataturk constructed from being shaken and protected it from storms.

The image of Inonu in Aydemir's prose is not just that of a politician, but also a symbol of the state's "eternal memory" and "cool rationality". In the third volume, Aydemir notes that Inonu's greatest victory was losing power; this is a paradoxical understanding of leadership. According to the author, by opening the way for democracy in the country through his own will, Inonu raised the system he led to "another level": [Aydemir, 1968, Vol. III, p. 210]. The writer emphasizes that handing over power through peaceful means a

charismatic leader (the National Chief) lowering himself to the level of an "ordinary citizen" before the law is a "moral greatness" rarely seen in the history of leadership. In Aydemir's artistic reflection, the image of Inonu gains a completely different sublimity at this point. He is no longer just an administrator, but a "pedagogue-leader" guiding the nation's political evolution. Aydemir proves that being the "Second Man" does not mean remaining in Ataturk's shadow, but transforming that shadow into a protective umbrella over the nation: [Aydemir, 1968, Vol. III, p. 256].

In the novel The Second Man, Inonu's sociological facets specifically his statist (etatist) approach to the economy and his role in the establishment of Village Institutes also occupy a large space. According to the writer, Inonu tried to build the "social base" of the revolution more than its "thought base". He believed that without defeating illiteracy and poverty, the Republic would not truly survive: [Aydemir, 1967, Vol. II, p. 412]. This sociological depth turns the work from a mere biography into the documentation of Turkey's modernization laboratory. The character of Inonu is also one who experiences the "solitude of responsibility" most deeply. Aydemir describes how Inonu, when making every decision (such as the 1946 elections or the handover of power on May 14, 1950), looked not to himself, but to his "account before history". This foresight is the primary factor that kept him away from petty political intrigues and turned him into the "iron-willed elder" of history. While analyzing Inonu's life, the writer shows that sometimes "remaining silent" is a political weapon stronger than the sharpest declaration: [Aydemir, 1968, Vol. III, p. 312].

Ultimately, through the image of Inonu, the author proves that in the great turnings of history, just as much as charismatic will (Ataturk) is needed, administrative intelligence (Inonu) that transforms that will into an unshakeable system is equally vital. In Aydemir's artistic reflection, Inonu is an absolute "system protector" who succeeded in creating an island of stability in a collapsing world, coolly guarding both the military and political victories of the nation.

"Menderes's Drama" – Democratic Transition and the Populist Leader: A Philosophical View on the Adnan Menderes Phenomenon.

Shevket Surayya Aydemir's work Menderes's Drama (Menderesin dramı) constitutes the most shocking and sociologically turbulent link in his series of biographical prose. It serves as a fundamental source that analyzes, within a philosophical-historical framework, the pangs of Turkey's transition to a multi-party system and the phenomenon of Adnan Menderes, who stood at the center of this process. In this work, the author presents the leadership phenomenon differently from the "foundational" mission of Ataturk and the "protective" mission of Inonu; he portrays it as a sharp collision between mass populism and state tradition, and the individual-political tragedy arising from this collision.

Aydemir's approach to the character of Adnan Menderes carries the character of a sociological "diagnosis". He brings Menderes to life not merely as a politician, but as the artistic-philosophical manifestation of Turkey's peasant sociology, the property-owning class, and the concept of the "national will" (milli iradə). This perspective is introduced early in the text: [Aydemir, 1969, p. 15]. The writer did not choose the expression "Drama" in the work's title by chance; he artisticizes Menderes's life in a manner similar to classical Greek tragedies—through stages of ascent, peak, and inevitable fall. According to Aydemir, Menderes's drama stems not from his personal deficiencies, but from the contradictions of the inevitable "intermediate stage" (ara mərhələ) in which history placed him.

The author traces Menderes's journey from the plains of Aydın and his roots in a landowning family to his rise as a Member of Parliament and eventually as Prime Minister. In doing so, he filters the tectonic changes in Turkey's social structure through a literary lens. This social evolution is documented in detail: [Aydemir, 1969, p. 42]. In Aydemir's analysis, Adnan Menderes—unlike Ataturk and Inonu—was the first charismatic leader tipology to emerge not from the military bureaucracy, but from the civilian sphere. However, this charisma was based more on emotional mass psychology and populism than on rationality. The author emphasizes that Menderes, as a leader who "spoke the language of the people" and promised them economic welfare and religious-spiritual freedom, was able to lead the masses. Yet, this enthusiastic love urged him into a collision with the cold and unchangeable laws of the state (raison d'état): [Aydemir, 1969, p. 210].

Although the elections of May 14, 1950, are described as a "white revolution" (beyaz ihtilal), Aydemir senses the philosophical danger behind this victory earlier than anyone else. He posits that a leader viewing the "national will" as superior to everything—including the law and state tradition—leads to an inevitable authoritarianism and, ultimately, tragedy. By creating the artistic reflection of Menderes, the writer documents the risks created by building democracy on emotional rather than institutional foundations. In his depiction, Menderes is a shaken character—one filled with a sincere passion for service, yet simultaneously a victim of the arrogance and errors brought by power.

The sharpest part of the drama resides in the pages reflecting the psychological and political collapse leading up to the coup of May 27, 1960. In describing Menderes, Aydemir utilizes artistic mastery to portray his increasing isolation, the influence of his inner circle, and, most importantly, how the exhausting rivalry with the "Second Man," İsmət Inonu, consumed him. This rivalry is detailed in the text: [Aydemir, 1969, p. 345]. Here, two leadership typologies collide: State Reason (Inonu) and Mass Enthusiasm (Menderes). According to Aydemir, Menderes prepared his own tragedy by thinking he could do anything by relying on "mass support" without considering the "iron laws" of the state, such as the institutional bureaucracy and the military.

While describing the Yassıada trials, the author presents the leader's path to the execution gallows as a philosophical "report". The section describing Menderes's execution is one of the most dramatic pages of documentary-artistic prose in Turkish literature: [Aydemir, 1969, p. 488]. The writer characterizes the exe-

cution not merely as a death, but as the suicide of Turkish democracy and the bloody price of a leader's "error". According to the author, Menderes actually symbolized the ascent to power of the "hidden and suppressed" voice of Turkey the people of Anatolia. He provided the peasant with roads, water, light, and, most significantly, the feeling of being "treated as a human being" [Aydemir, 1969, p. 112].

However, the writer's critical view lies in the fact that instead of transforming this economic and social energy into a modern and rational state mechanism, Menderes turned it into an instrument of his personal popularity and political polarization. When comparing Menderes with Ataturk and Inonu, Aydemir emphasizes that while the firstiki leaders were "founding wills," Menderes represented the "distribution" and "usage" phases of that establishment. This is noted in his analysis: [Aydemir, 1969, p. 156]. This placed a heavier sociological burden upon the leader: to both modernize the nation and reconcile it with its traditional-religious values. According to Aydemir, Menderes collided with the protective organs of the system because he attempted to build this reconciliation on "exploitation" the use of religion for political ends rather than rationality.

In Aydemir's artistic style, the character of Menderes also comes to life as a "lonely heart". The author penetrates the most human aspects of the leader while analyzing his family ties with Berin Menderes, his internal solitude, and the letters he wrote before his execution. This human depth is explored in the narrative: [Aydemir, 1969, p. 410]. The writer stresses that "Menderes went down this path knowing his tragedy, because he believed the love of the masses would protect him from everything". Yet, Aydemir's scientific-philosophical conclusion is that the love of the masses is like a "building constructed on sand"; in moments of crisis, those masses leave their leader alone.

The silence at Yassıada and the silence of the people constituted Menderes's greatest drama. Aydemir neither condemns Menderes nor grants him full acquittal; he simply documents the struggle of a leader within the "bloody gears" of history. Ultimately, through this character, the author proves that being a leader in a multi-party system is not just about gathering votes, but also about the ability to keep the dynamic energy of the nation in balance with the bureaucratic-legal backbone of the state. Menderes's drama is a crisis point in the history of Turkey's modernization, and Aydemir artisticized this crisis with the sensitivity of a master biographer. Aydemir's image of Adnan Menderes is an indelible artistic tableau born from the collision of cold historical truths with the warm and emotional world of a human being [Aydemir, 1969, p. 510].

Leader–Mass Relations: The Role of the Individual in History in Aydemir's Prose.

One of the most fundamental questions encountered in the analysis of Shevket Surayya Aydemir's artistic-biographical corpus concerns the classical historiographical dilemma of whether history is shaped by individuals or whether individuals themselves emerge as products of historical processes. This question represents the most complex outcome of Aydemir's long-standing intellectual struggle as both a sociologist shaped by a Marxist intellectual background and a revolutionary statesman deeply engaged in the construction of a modern nation-state.

For Aydemir, history cannot be reduced to a chronological accumulation of past events; rather, it constitutes a living sociological organism. Within this organism, the leader functions as the intellect or consciousness, whereas the masses represent its social body. As emphasized in The Man Searching for Water, an individual becomes a genuine historical subject only when personal destiny merges with the collective destiny of society. This conceptual unity forms one of the central methodological foundations underlying Aydemir's entire biographical series.

Although society inherently possesses immense latent energy, Aydemir argues that such potential remains chaotic and occasionally destructive unless directed through the conscious will of leadership. In describing this relationship, the author frequently employs the metaphor of the artist and material: the masses resemble raw clay, while the leader assumes the role of a sculptor capable of transforming this material into a monument of civilization (Aydemir, 1963, Vol. I, p. 18). However, this metaphor does not imply the superiority or alienation of the leader from society. On the contrary, according to Aydemir, an authentic leader is the individual who perceives earlier than others the unarticulated aspirations embedded within the collective subconscious of the nation and transforms them into a national objective.

As emphasized in the second volume of The Single Man, Mustafa Kemal's greatest intellectual achievement lay in recognizing the dormant desire for liberation within the exhausted Anatolian population and transforming this latent impulse into a transformative historical force (Aydemir, 1965, Vol. II, p. 114).

A crucial dimension of Aydemir's leader–mass dialectics derives from the philosophical framework developed during the Kadro period (1932–1934). According to this perspective, the survival of a revolution requires the existence of a conscious elite — the cadre — functioning as an intermediary mechanism between leadership and society. Revolutionary theory must descend toward society through leadership, while the energy of the masses must be transformed into state rationality through organized intellectual guidance.

For Aydemir, a mass without leadership lacks direction, whereas leadership without social support remains powerless. The element uniting these two forces is ideology, embodied and transmitted through intellectual cadres. This theoretical perspective fundamentally shapes Aydemir's interpretation of both Ataturk and Inonu.

At the same time, Aydemir occasionally portrays the masses as an unstable and unpredictable ocean a characterization that becomes particularly evident in The Drama of Menderes. In this work, the tragic dimension of leader–mass relations emerges with striking clarity: the same masses capable of elevating a leader may also abandon him during moments of crisis. While describing Menderes's mass rallies, Aydemir notes that the leader perceived popular affection as an unshakable

fortress, yet failed to recognize that collective enthusiasm often retreats before the cold rationality of state institutions (Aydemir, 1969, p. 412).

This observation reveals the limits of individual agency within history. According to Aydemir, although individuals may redirect historical trajectories, failure to recognize structural realities and institutional traditions ultimately renders mass support insufficient for political survival.

Within Aydemir's intellectual framework, the role of the individual in history must also be examined through the lens of what may be described as political pedagogy. According to the author, the foremost responsibility of leadership lies not merely in governance but in the education and transformation of society itself elevating the masses to the level of a conscious nation. This dimension becomes particularly evident in The Second Man, where İsmet Inonu emerges not primarily as an emotional mobilizer of society but rather as its organizer and educator. Inonu appears as a leader who teaches society not only how to act, but also what to aspire to (Aydemir, 1967, Vol. II, p. 54).

In Aydemir's artistic interpretation, great historical personalities do not simply enact legislation or administer political systems; rather, they fundamentally reshape collective character, national identity, and societal imagination regarding the future. The position attributed to the individual within history in Aydemir's prose therefore rests upon a philosophical synthesis between Hegelian and Marxist thought. While Hegel conceptualized great historical figures as instruments through which the absolute spirit of history realizes itself, Aydemir accepts this premise only conditionally, supplementing it with a sociological requirement. Leadership becomes historically effective only when the socio-economic foundations of society are prepared to receive transformative change.

As emphasized in the introductory sections of The Single Man, had Turkey not reached a profound stage of political and socio-economic collapse, Mustafa Kemal's revolutionary will would have remained historically ineffective (Aydemir, 1963, Vol. I, p. 28). In this sense, the individual simultaneously functions both as the guide of history and as one shaped by it.

At the conceptual center of this interpretation stands Aydemir's well-known metaphor of The Man Searching for Water. This metaphor symbolically encapsulates not only the author's own intellectual journey but also the existential mission attributed to the leaders portrayed throughout his biographical narratives. Within this symbolic structure, "water" represents national liberation, progress, scientific development, and economic independence. The nation suffers from thirst yet remains uncertain where salvation may be found; the leader, however, is the individual capable of sensing the hidden source beneath the surface and dedicating an entire lifetime to uncovering it.

Thus, the highest historical function of the individual, in Aydemir's understanding, lies in discovering life-giving possibilities precisely at moments when collective hope appears exhausted. Leadership consequently transcends conventional political authority and assumes an ontological dimension connected to national existence itself. Great leaders, in this framework, become the materialized form of collective consciousness embodied within a single individual. Ataturk's will, for instance, is interpreted as the concentrated manifestation of Anatolia's collective struggle for survival — a process Aydemir implicitly defines as the individualization of national energy.

From this perspective, decisions taken by leaders appear simultaneously as decisions emerging from society itself; however, the leader's mediating role remains decisive. Without rational direction, collective energy would remain merely a spontaneous uprising incapable of producing a modern state structure. In Aydemir's literary reconstruction, Republican-era personalities rise precisely as agents capable of transforming chaos into institutional order.

Aydemir repeatedly emphasizes that moments of decision render the leader the loneliest figure within history. Such loneliness does not signify weakness but rather reflects the burden of historical responsibility borne by an individual confronting the future on behalf of an entire nation. The historical significance of leadership, therefore, is measured by the capacity to endure this existential isolation.

Another significant dimension of Aydemir's interpretation of leadership concerns the question of historical timing and political intuition. In his narratives, leadership is closely associated with the ability to recognize the precise moment at which historical intervention becomes possible. The leader therefore emerges not merely as a political actor but as a strategist capable of maintaining a delicate balance between anticipation and action.

Throughout various sections of The Single Man, Aydemir illustrates how Mustafa Kemal carefully navigated the fragile equilibrium between patience and decisive intervention. According to this interpretation, leadership represents an art of historical intuition: if a leader advances too far ahead of society, the masses lose connection with him; yet if he remains behind collective movement, historical momentum dissipates. Genuine leadership consequently exists within this narrow zone of equilibrium between social readiness and visionary initiative.

Aydemir's analytical rigor becomes particularly evident in his refusal to mythologize leadership success. Even political failures are interpreted through sociological conditions rather than personal inadequacy. While examining the economic hardships experienced during the Inonu period, Aydemir demonstrates that even the most disciplined and rational leadership may encounter limitations imposed by global structural realities, particularly those shaped by the material consequences of world war. Such an approach prevents the idealization of historical figures and situates leadership firmly within the broader dynamics of historical necessity.

Ultimately, the role of the individual in history, within Aydemir's intellectual system, may be defined as a form of what might be termed an ontology of responsibility. A leader becomes a leader not through privilege or authority alone, but through transforming

historical duty into the very meaning of personal existence. In this sense, the artistic representation of great personalities transcends biographical narration and evolves into a sociological documentation of humanity's struggle within historical transformation.

Aydemir's biographical novels repeatedly revolve around a central question: how can a single individual carry the historical destiny of an entire nation? His implicit answer lies in the fusion between individual will and collective consciousness — the dissolution of the self within the spirit of the nation, and simultaneously the embodiment of that nation within individual determination.

For this reason, the portraits created by Aydemir function not merely as historical depictions but as profound human documents of Turkey's modernization experience. The individual appears simultaneously as both the painter and the pigment of history: shaping historical reality while inevitably becoming absorbed within it. This enduring dialectic between leader and masses ultimately constitutes one of the most fundamental theoretical frameworks for understanding both the past trajectory and the future development of the Turkish Republic.

Conclusion - The comprehensive analysis conducted on the monumental artistic-biographical legacy of Shevket Surayya Aydemir demonstrates that the author did not merely document Turkey's modernization process but also reconstructed its sociological and philosophical essence within a literary and intellectual framework. The findings of this study reveal that Aydemir's trilogies The Single Man, The Second Man, and The Drama of Menderes function as an intellectual and artistic "radiography" of three fundamental stages in the historical evolution of the Turkish Republic: state formation, institutional consolidation, and democratic transition.

By synthesizing biography with sociological analysis, Aydemir elevated the genre beyond descriptive narration and transformed historical personalities into dynamic human representations shaped by hesitation, responsibility, and historical necessity. His portrayals move beyond the rigidity of factual historiography, presenting leaders as individuals positioned at the intersection of structural historical forces and personal will. Within this framework, leadership emerges not as a privilege but as a demanding historical mission born from the confrontation between objective historical conditions and individual responsibility.

The leadership typology constructed by Aydemir enables a layered interpretation of Turkey's political transformation throughout the twentieth century. The figure of Mustafa Kemal Ataturk represents the founding will capable of transforming chaos into institutional order and establishing the ontological foundations of revolutionary change. In contrast, İsmet Inonu embodies administrative rationality and systemic continuity, ensuring the institutional survival and stabilization of the revolutionary project. Adnan Menderes, however, illustrates the tragic dimension of leadership within democratic transition, revealing the tensions between mass populism and the structural logic of the state.

These three leadership models collectively constitute a sociological laboratory through which Turkey's century-long modernization experience may be interpreted. By confronting each leader with the specific crises of their respective historical contexts, Aydemir demonstrates that leadership success or failure cannot be understood independently of broader socio-political conditions.

At a deeper philosophical level, Aydemir's intellectual contribution lies in establishing a delicate balance between historical determinism and human agency. His narratives reveal that while historical processes create the conditions necessary for transformation, decisive change ultimately requires individuals capable of interpreting and directing these conditions. Leadership, therefore, becomes both a product of history and an active force shaping its trajectory.

Ultimately, Aydemir's biographical prose transcends literary representation and evolves into a form of sociological memory through which the ontological foundations of the Turkish Republic are articulated. In his works, leaders are not portrayed merely as political actors but as architects capable of interpreting the collective consciousness of society and constructing institutional frameworks aligned with national transformation. Whether manifested in the revolutionary dynamism of Ataturk, the disciplined institutionalism of Inonu, or the dramatic democratic experience represented by Menderes, leadership in Aydemir's prose emerges as both the beginning and the consequence of historical change.

Thus, Aydemir's intellectual and literary legacy offers not only an interpretation of the past but also a theoretical framework for understanding leadership and modernization in broader sociological and political contexts. His work ultimately portrays history as a dialectical interaction between the objective laws of historical development and the transformative will of exceptional individuals.

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ИДЕЙНО-СОДЕРЖАТЕЛЬНЫЕ ОСОБЕННОСТИ НАРОДНОГО СКАЗАНИЯ «ХУРШИД И МАХМЕХРИ»

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IDEA AND CONTENT FEATURES OF THE FOLK TALE “KHURSHİD AND MAHMEHRİ”

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Аннотация

Одним из десятков народных сказаний, хранящихся в Институте рукописей имени Мухаммеда Физули НАНА, является «Хуршид и Махмехри». Рукопись, сохраняемая под шифром V-165/1754, имеет объём 47 страниц. Это сказание, созданное на основе одноимённого дастана, повествует о чистой и взаимной любви двух молодых людей; данная тема широко распространена как в азербайджанском, так и в мировом фольклоре. В мировой фольклористике существует несколько вариантов указанного сказания: одни из них завершаются воссоединением, другие - печалью. Вариант, хранящийся в Институте рукописей, в отличие от многих, завершается сценой достижения влюблёнными счастья и их соединения. Хуршид и Махмехри проходят через множество испытаний и, в буквальном смысле слова, достойны быть счастливыми.

Abstract

Among the many folk tales preserved at the Institute of Manuscripts named after Muhammad Fuzuli of the ANAS, one is “Khurshid and Mahmehri”. The manuscript, catalogued under the code V-165/1754, consists of 47 pages**.** This tale, based on the epic of the same name, tells the story of the pure and mutual love between two young people - a theme widely represented in both Azerbaijani and world folklore. Several versions of this tale exist in world folklore studies: some end in union and happiness, while others conclude with sorrow. The version preserved at the Institute of Manuscripts, however, differs from many others by ending with the lovers’ reunion and attainment of happiness. Having endured numerous trials, Khurshid and Mahmehri truly prove themselves worthy of joy and fulfillment.

Ключевые слова: Хуршид, Махмехри, дастан, сказание, рукопись.

Keywords: Khurshid, Mahmehri, epic, story, manuscript.

Введение. Азербайджанская народная литература обладает богатыми традициями и глубинным по содержанию наследием. Одной из основных составляющих этого наследия являются народные сказания и дастаны. Эти произведения представляют собой литературные образцы, отражающие мировоззрение народа, его духовные ценности, мечты и образ жизни. Одним из таких народных сказаний является «Хуршид и Махмехри». Главные герои сказания - Хуршид и Махмехри - двое молодых людей, любящих друг друга; история выдвигает на первый план такие общечеловеческие ценности, как любовь, верность, стойкость в борьбе и справедливость. Махмехри - девушка, выделяющаяся красотой, мужеством и умом, Хуршид же - смелый, честный и отважный юноша. На пути их чистой и искренней любви возникает ряд препятствий. Эти препятствия в основном обусловлены противоречиями между семьями, различиями социальных слоёв и некоторыми личными интересами. На протяжении сказания Махмехри и Хуршид проходят через различные испытания, однако сохраняют верность друг другу. Их любовь превращается не только в стремление к личному счастью, но и в борьбу, направленную на защиту справедливости и правого дела. В конце эта борьба успешно завершается, и сказание оканчивается счастливым финалом.

Как следует из названия, сказание «Хуршид и Махмехри» имеет астральное (связанное с небесными телами) происхождение. Слово «Хуршид» является персидским и означает «Солнце». Имя «Махмехри» состоит из двух частей: «Мах» - «Луна», «Мехри» - «любовь», «привязанность» либо «свет». Таким образом, выражение «Хуршид и Махмехри» означает «Солнце и Луна», то есть единство двух основных небесных светил. С этой точки зрения название произведения напрямую основывается на астральной символике и формирует поэтическую модель космической гармонии.

В литературе и мифологии мотив Солнца и Луны выражает мужское и женское начала, противопоставление света и тьмы, две противостоящие, но взаимодополняющие силы жизни. Хуршид - активное, излучающее свет, животворящее начало; Махмехри же - утончённое, спокойное, в художественном смысле - воплощение света. Таким образом, соединение этих двух образов выступает как символ любви и единства, а также как художественное выражение космического равновесия. Астральный характер названия сказания «Хуршид и Махмехри» органично связан с его поэтическим и

философским содержанием. Название символически включает в себя идею сказания, художественно выражая свет, любовь и единство. Оно не только возвышает уровень любви героев, но и выводит произведение за пределы сугубо человеческих чувств, поднимая его на космический и духовный уровень.

В целом астральные произведения основываются на представлении природных сил, природных явлений, особенно небесных тел, планет и созвездий, в антропоморфном виде. В таких произведениях события, происходящие в мире звёзд, иногда изображаются в пределах целого года, иногда - отдельных времён года, а иногда - в рамках одних суток. Астральные произведения создаются посредством очеловечивания планет и созвездий. В соответствии с древними мифами и широко использовавшей их древней и средневековой астрологией, некоторые планеты антропоморфизируются в образе девушек и женщин, другие - в образе юношей и мужчин; на основе их взаимоотношений выстраивается сюжет и композиция художественного произведения [5, с. 310].

Народное сказание «Хуршид и Махмехри» является важным образцом, воплощающим художественно-эстетические ценности азербайджанского фольклора. В данном произведении духовные ценности народа - такие понятия, как верность, самоотверженность, мужество, справедливость и любовь, - представлены в качестве основной идейной линии. Герои сказания олицетворяют идеализированные народом характеры: Махмехри - образ волевой и благородной женщины, Хуршид - образ борющегося и мужественного мужчины. Особая значимость этого сказания заключается в том, что женский образ представлен здесь не пассивным, а, напротив, активным и решительным. Махмехри выделяется не только своей красотой, но и мудростью, отвагой и верностью. Это является одним из показателей высокой оценки роли женщины в азербайджанской литературе.

Сказание «Хуршид и Махмехри» является широко распространённым легендарно-романтическим народным дастаном в азербайджанской и в целом в фольклорной традиции тюркских народов. На протяжении тысячелетий оно занимало важное место в культуре, мировоззрении и эстетическом сознании народа. Упомянутое народное сказание в основном восходит к фольклорным традициям восточных народов, в особенности Азербайджана, Ирана и других тюркских народов. В последние годы исследования, проведённые вокруг данного сказания, заслуживают особого внимания; в этом контексте значительное место занимает калифорнийская версия, выявленная турецкими исследователями О. Дашдемиром и М. Э. Алтынышыком: *Сказание «Хуршид и Махмехри», с одной стороны, разрабатывает тему любви и героизма, а с другой - наглядно демонстрирует отзвуки космического порядка в коллективной памяти. В этом аспекте оно не ограничивается рамками любовной истории, а может быть оценено как многослойное произведение, питающее общественную память, мифологические корни и коллективную идентичность. Научные исследования устных и письменных вариантов сказания «Хуршид и Махмехри» показали, что его экземпляр, датированный 1254 (1838) годом, зарегистрирован в составе джунга № 30 (рукопись № 1487, листы 43a–80b) в Специальных коллекциях Библиотеки Калифорнийского университета в Лос-Анджелесе (UCLA) [3, с. 5].*

Несмотря на то что ранее выдвигалось предположение о составлении сказания одним из народных ашугов XIX века - Дадалоглу, исследования последних лет свидетельствуют о том, что произведение сформировалось в XVI или XVII веках [2].

В центре сказания находится чистая любовь Махмехри и Хуршида, которая в народной литературе представляется как идеальная форма любви и остаётся незыблемой, несмотря на социальные, семейные и политические препятствия. Элемент жертвенности и самоотверженности в сказании подчёркивает святость любви и высокие человеческие ценности. Образы Махмехри и Хуршида выступают как символы света и луны. Посредством этих символов в сказании художественно воплощаются такие дуальные понятия, как силы природы, жизнь и смерть, добро и зло. Именно это образует философскую основу произведения. Сказание также отражает общественные нормы, человеческую судьбу и представления о героизме.

Азербайджанские и тюркские фольклористы всесторонне исследовали сказание «Хуршид и Махмехри» с литературной и культурной точек зрения. Между мотивами данного сказания и образцами классической литературы, а также другими произведениями мирового фольклора были проведены параллели. Эти исследования подтверждают, что сказание обладает универсальной тематикой и общечеловеческими ценностями.

Привлечённое нами к исследованию народное сказание было широко распространено в ряде регионов Анатолии, особенно на территории Южной Анатолии, и передавалось из поколения в поколение. Стихотворные фрагменты сказания в основном созвучны традиции ашугской поэзии. Большинство стихов написано в форме гошма, что позволяет предположить, что образ Хуршида мог быть связан с реально жившим ашугом. Однако данное предположение не получило научного подтверждения [2].

Краткое содержание сказания таково. Равияни-ахбар повествуют, что в городе под названием «Гянджи-Карабаги» жил мудрый и справедливый падишах, который на протяжении многих лет не имел детей. Каждый день он приходил в большой сад за пределами города, воздевая руки и моля Всевышнего о даровании потомства. Однажды в этом саду падишах встретил пира. Пир вручил падишаху два яблока - одно белого, другое красного цвета - и сказал: *«Одно из этих яблок съешь ты сам, а другое дай своей супруге. Если будет на то воля Всевышнего, у тебя родится прекрасный сын, а ему будет суждено встретить девушку, подобную солнцу»* [4, с. 4]. После того как падишах исполнил слова пира, через девять месяцев и десять дней у него родился

сын по имени Хуршид, которому не было равных в красоте. Проходили месяцы и годы. Однажды падишах сказал своему сыну, гордившемуся собственной красотой, что он достиг брачного возраста: «У меня больше не будет детей, сын мой, давай я женю тебя, чтобы у тебя были потомки. Укажи девушку, которую желаешь, и я возьму её для тебя». Однако Хуршид, не внимая настойчивым просьбам отца, не находил среди предлагаемых девушек ни одной достойной его выбора.

Однажды, когда Хуршид задремал в месте, называемом «Мурат тепеси», ему во сне явились «Сорок пиров» и сказали: *«В таком-то месте есть девушка по имени Махмехри. Она необычайно прекрасна и предназначена тебе судьбой, не склоняйся к другой. Через семь с половиной месяцев эта девушка придёт и найдёт тебя. Но никому об этом не говори»* [4, с. 5]. Увидев во сне Махмехри, Хуршид потерял рассудок от любви и всем сердцем воспылал к ней.

После того как «Сорок пиров» покинули Хуршида, они явились во сне и Махмехри - дочери купца из города Ичмян, единственной сестре семи братьев, - и сказали ей те же слова. В результате Махмехри также всей душой влюбилась в Хуршида и стала с нетерпением ожидать истечения назначенного срока: *«Как сорок пиров показали девушке Хуршида, так же они показали Хуршида девушке. Как Хуршид вздыхал и стонал, так же поступала и она. И при этом девушка говорила себе: "Эти счастливцы не лгут, непременно настанет день, когда мы встретимся", - утешая себя»* [4, с. 6].

После этого события лекари не смогли найти лекарства от любовной болезни, поразившей Хуршида. Он день ото дня бледнел и чах, отказывался от еды и питья, прижимал к груди саз и, словно ища себе собеседника, делился своей болью с соловьём, журавлём и купцом.

В то время как Хуршид сгорал в огне любви, с другой стороны некий человек по имени Кара хан, желая завладеть Махмехри, послал своих людей к её братьям. Чтобы в стране не вспыхнула вражда, братья притворно дали согласие, однако ночью, собрав всё, что имели, покинули место своего проживания. Кара хан, собрав войско, пустился за ними в погоню. Так случилось, что Махмехри и её братья нашли убежище на летовье деда Хуршида. На фоне разворачивающихся событий братья вступают в бой с Кара ханом, а Махмехри вместе с женщинами остаётся в шатре на летовье. Именно в этот момент истекает срок в семь с половиной месяцев, обещанный «Сорока пирами». Это означает, что настал день воссоединения Хуршида и Махмехри. Когда два влюблённых встречаются на летовье и видят друг друга, они теряют рассудок, падают без чувств. С помощью близких они приходят в себя, берут в руки саз, обмениваются гошмами, дают друг другу обеты, а затем, убедившись в своём предназначении, обнимаются и кладут конец разлуке.

Однако это воссоединение длится недолго. Для Хуршида и Махмехри вновь начинается путь разлуки. По желанию братьев Махмехри покидает летовье и, уходя, оставляет написанное Хуршиду письмо под камнем. Несчастный влюблённый, прочитав письмо, теряет сознание; хотя его пытаются утешать в течение нескольких дней, Хуршид не может смириться с произошедшим и отправляется вслед за Махмехри. Во время пути Хуршид встречает на дороге седую гору и пастуха. Прижав к груди саз, он исполняет печальные стихи. Пастух сообщает ему, что Махмехри прошла здесь месяц назад, и указывает дорогу, по которой она отправилась.

Следуя по указанному пастухом пути, Хуршид достигает страны Махмехри - области Ичмян. И что же он видит? Свадьбу своей возлюбленной Махмехри с Кара ханом, которого она вынуждена принять. Женщина по имени Хасрат, уверенная в чистоте и искренности любви Хуршида, делает всё возможное для воссоединения влюблённых. В день свадьбы, опоив Кара хана, она создаёт условия для бегства Махмехри вместе с Хуршидом. Однако события развиваются не совсем так, как было задумано. Очнувшись от действия вина, Кара хан бросается в погоню за беглецами. Настигнув влюблённых в пути, он угрожает Махмехри, говоря: *«Как ты осмелилась бежать от меня? Я отрублю тебе голову».* Но Махмехри, готовая на всё ради своей любви, пущенной стрелой становится причиной гибели Кара хана. Пройдя через множество испытаний и тягот на пути любви, влюблённые в конце концов достигают страны Хуршида. Его отец, в своё время передав Хуршиду свой трон, устраивает для них сорокадневную и сороканочную свадьбу: *«Им обоим сразу сыграли свадьбу, длившуюся сорок дней и сорок ночей. Махмехри и Хуршид достигли своих желаний и прожили счастливую, спокойную жизнь. Вот здесь и завершается наше сказание»* [4, с. 47].

Мотив дарования буты. Мотив дарования буты во сне является мифопоэтическим мотивом, тесно связанным с древними верованиями тюркских народов, их тотемистическим мировоззрением и мифологическим мышлением. Данный мотив связан с избранием героя, возложением на него миссии божественными или духовными силами. «Дарование буты» — это событие, при котором герой в дастанах видит во сне свою возлюбленную (буту) и устанавливает с ней духовную связь. В народной литературе понятие «бута» понимается как символ возлюбленной, а также как знак божественного предназначения. Бута - это духовный знак, получаемый героем во сне, божественное вдохновение и призыв к любви.

Событие дарования буты во сне обозначает этап перехода героя из состояния обычного человека в состояние избранного существа. Посредством этого сна герой переходит из материального мира в духовный, и с этого момента его жизнь строится вокруг любви, верности и поиска. Слово «бута» имеет значение как возлюбленной, так и божественного символа. Герой «принимает» буту во сне, то есть ему даруются духовная любовь, сила и обет верности. В основе данного мотива, согласно древнему тюркскому мировоззрению, лежит вера в

то, что человеческая судьба определяется в мире духов. Иначе говоря, любовь, миссия и борьба, с которыми герой столкнётся в жизни, преподносятся ему во сне в форме «благой вести».

Сон здесь выступает как средство божественного или духовного контакта, выполняя функцию предварительного оповещения о судьбе и указывая на избранность героя. В «Китаби-Деде Коркут» данный мотив представлен опосредованно: хотя прямого дарования буты во сне там нет, присутствуют сходные мотивы божественного направления и получения вести через сон. Так, такие герои, как Казан-хан, Бамсы Бейрек, Байбёре оглу Бамсы Бейрек, выступают как «избранные» образы с точки зрения убеждений, любви и миссии. В «Бое Бамсы Бейрека» духовная встреча Бейрека с его невестой во сне и принятие её как «буты» оцениваются фольклористами как первоначальная форма мотива дарования буты.

В ашугских дастанах (например, «Аслы и Керем», «Ашыг Гариб») данный мотив представлен в полностью сформировавшемся виде: герой во сне видит ангелоподобную девушку, получает от неё буту, и с этого момента становится влюблённым, посвящая всю свою жизнь поиску этой буты и воссоединению с ней. Так, в дастане «Ашыг Гариб» Гариб во сне видит Шахсанем, которая дарует ему буту, и это событие становится началом его пути ашуга. В этом контексте особый интерес представляют параллели в народном сказании «Хуршид и Махмехри». Как было отмечено выше в кратком содержании сказания, Хуршид и Махмехри получают буту во сне, вследствие чего их жизненные пути коренным образом меняются. Если до получения буты Хуршид обладал характером человека, гордившегося своей красотой и не принимавшего никого, то после получения буты он полностью преображается: внезапно становится милосердным человеком, верным возлюбленным и достойным сыном. В этом смысле мотив дарования буты является не просто любовным эпизодом, но символом духовного взросления человека, выхода на путь нравственного совершенствования.

Заключение. Народное сказание «Хуршид и Махмехри» является одним из образцов азербайджанской народной литературы, обладающих глубокими смысловыми слоями. Астральное происхождение произведения свидетельствует о том, что оно сформировалось под воздействием мифологического и символического мышления. Через образы Хуршида и Махмехри в сказании художественно выражается единство света и луны, мужского и женского начал, а также гармония, существующая во Вселенной. Основная идея произведения опирается на чистую и возвышенную любовь двух молодых людей; эта любовь, преодолев все препятствия, завершается счастливым исходом. Таким образом, сказание «Хуршид и Махмехри» может быть оценено как один из ценных образцов азербайджанского народного творчества как с точки зрения астральной символики, так и с точки зрения утверждения духовных ценностей.

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TEXTUAL AND HISTORICAL ANALYSIS OF HASAN IKHFA ALIZADE AND THE WORK "THE HISTORY OF THE CITY OF SHUSHA"

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Abstract

This article examines the manuscript work The History of the City of Shusha by Hasan Ikhfa Alizade, who lived in the early 20th century, from both a textual and historical perspective. Hasan Ikhfa Alizade, whose life and works have not been extensively studied until now, is analyzed through available archival materials and manuscript sources, highlighting his literary and scholarly profile. The first section of the study focuses on the codicological and paleographic features of the manuscript, including the type of script, paper, ink, page layout, and other aspects related to the copying process.

Subsequently, based on the historical data contained in the manuscript, the administrative, social, and cultural structure of 19th-century Shusha is analyzed. The study examines the city's administrative institutions, educational structures, religious sites, and social relations as described by Alizade, situating the work within the broader tradition of local historiography. Additionally, the reliability of the historical information in the text is assessed through a comparative analysis with other contemporary written sources.

In conclusion, this study demonstrates that The History of the City of Shusha is an important resource both for the history of the text itself and for the historiography of local Azerbaijani history. It emphasizes Hasan Ikhfa Alizade's role in preserving the historical and cultural memory of 19th-century Shusha, providing valuable insights into the city's past through the lens of a rarely studied manuscript.

Keywords: Hasan Ikhfa Alizade, Shusha, textual, urban historiography, Karabagh.

Introduction

The nineteenth and twentieth centuries constituted a significant stage in the development of Azerbaijani literature. These periods are regarded as time frames marked by transition and transformation, representing a shift to a new phase in social, political, and literary-philosophical terms. During these eras, literature underwent substantial innovations in both form and content, laying the groundwork for the aesthetic reflection of public enlightenment, national awakening, and ideals of freedom.

In the nineteenth century, the emergence of new genres in Azerbaijani literature - such as the novel, long story, novella, short story, and drama - had a profound impact on the structure and content of classical literature and paved the way for the formation of new literary schools. Enriched by Enlightenment thought, the literature of this period began to take shape within the aesthetic and artistic framework of realism. Whereas romantic tendencies had predominated in the poetry of earlier periods, this phase brought Enlightenment ideas, a critical approach, and socio-political thought to the forefront. Consequently, literature that transcended the boundaries of classical poetry entered a new stage of development.

According to scholars, the principal ideological orientation of this period was Enlightenment thought, while its aesthetic and artistic tendency was Enlightenment realism. However, in literary studies, until the 1960s this phase was generally characterized as the period of critical realism (Habibbeyli, 2018, p. 4). According to Academician Isa Habibbeyli, nineteenth-century Azerbaijani literature completed its historical phase with the maturation and full development of Enlightenment-realist traditions; these traditions were also sustained at the beginning of the twentieth century, thereby providing a basis for the preservation of the principle of continuity (Habibbeyli, 2004, pp. 5-6).

Elements of realism in Azerbaijani literature first appeared in the eighteenth century in the poetry of Molla Panah Vagif, and in the nineteenth century they developed in the form of Enlightenment realism in the works of Mirza Fatali Akhundzade. At the beginning of the twentieth century, with the laying of the foundations of critical realism by Jalil Mammadguluzade, this tendency acquired new content and form. According to Prof. Dr. Teyyar Salamoğlu, critical realism emerged as the stage of realism following Enlightenment realism; the works of the artists gathered around the journal *Molla Nasreddin* shaped a type of critical realism that represented an entirely new qualitative phase in Azerbaijani realism (Salamoğlu, 2018, p. 9).

Mir Jalal Pashayev, in turn, defines this period as the "literature of the Molla Nasreddin era" (Mir Jalal, 2004, p. 15). The journal Molla Nasreddin made a significant contribution not only to satirical (satire/humor) literature but also to the development of the national Enlightenment movement and social thought; it brought together intellectuals from various professional backgrounds, including teachers, writers, painters, and musicians. For this reason, the figures active within this intellectual milieu have been referred to in the scholarly literature as the "Molla Nasreddinists."

One of the representatives of this intellectual circle was Hasan Ikhfa Alizade, a writer who was educated in Shusha, Karabakh. Alizade is recognized in Azerbaijani literature as a playwright and poet, as well as a historian and regional researcher (geographer/local historian). The author of numerous works written in a realist

style, Alizade reflected Enlightenment ideas and the social shortcomings of his time in his writings through a critical perspective. Among his Enlightenment activities, his pedagogical work occupies a particularly important place; he taught in schools in Aghjabadi, Aghdam, and Shusha. These factors make it possible to regard him as one of the prominent representatives of Enlightenment realism.

The work entitled *The History of the City of Shusha*, which we have transcribed, occupies an important place in the literary profile of Hasan Ikhfa Alizade. In this work, the author provides a comprehensive depiction of the historical development of the city of Shusha, as well as its social, economic, architectural, and cultural life. Of particular significance for the field of urban historiography, this study also demonstrates that Shusha was one of the cities constructed in a planned manner. The city was surrounded by fortification walls and distinguished by its stone-paved streets and neighborhood-based urban structure. The presence of a mosque, a bathhouse, and a marketplace in each neighborhood serves as an indicator of the city's social organization and system of public life.

Shusha functioned as an important economic center in terms of craftsmanship, carpet weaving, silk production, and trade. At the same time, a rich cultural environment emerged in the fields of music, literature, and Enlightenment thought. Artists such as Uzeyir Hajibeyli, Jabbar Garyaghdioghlu, Khan Shushinski, and Bulbul were among the prominent figures nurtured by this milieu. The schools, madrasas, and literary assemblies operating in the city played a crucial role in the development of Enlightenment ideals. In this context, the activities of figures such as Khurshidbanu Natavan, Mir Mohsun Navvab, Abdurrahim Bey Hagverdiyev, and Yusif Vazir Chamanzaminli deserve particular emphasis.

Through this work, Hasan Ikhfa Alizade opened a new direction in the field of Azerbaijani urban historiography, using the city of Shusha as a case study.

The Life of Hasan Ikhfa Alizade

One of the most reliable sources on the life and literary activity of Hasan Ikhfa Alizade is an autobiographical text written in his own hand. According to the information provided in this document, Alizade was born in 1893 in the city of Shusha. His father, Zeynalabdin, was known in Shusha by the nickname Aşpazbaşı (chief cook) and was illiterate. Nevertheless, he made considerable efforts to ensure that his son received an education. Hasan Ikhfa completed his primary education in his native city and began his professional career as a teacher in 1916.

From his secondary school years onward, Alizade began composing various poems and satirical texts, through which he criticized certain individuals. His acquaintance with the journal Molla Nasreddin occurred coincidentally; his first satirical poem, entitled "Bakıdan Ərəbski artist cavan gəldi, Guya Şuşaya birdən dünyanı alan gəldi" (A young Arabsky artist came from Baku, As if he had suddenly come to conquer the whole world in Shusha) was published in the journal in 1910. Jalil Mammadguluzade appreciated the poem and presented him with works by Pushkin; this encouragement gave impetus to Hasan Ikhfa Alizade's literary activities. Consequently, Alizade became one of the regular contributors to the journal Molla Nasreddin for many years.

In 1914, upon the official invitation of Jalil Mammadguluzade, he went to Tiflis and joined the editorial board of the journal. In addition to Molla Nasreddin, he published writings under the pseudonyms "Mirza Goshuneli," "Mirzeli," and "Hemin Humen" in satirical periodicals such as Kelniyyet, Mezeli, and Seda. He also served as the editor of the children's magazine Birinci Gedem.

In 1923, with the aim of continuing his education, he was admitted to the Azerbaijan Pedagogical University and graduated in 1927. In the following years, he worked as a teacher in various regions, serving in pedagogical institutions, an agricultural vocational school, and secondary schools. After being appointed to the Aghjabadi district in 1946, he encountered various difficulties, which he did not hesitate to express in his satirical poems. His relations with the district Party committee's second secretary and the Head of the Department of Public Education became strained; these officials, emphasizing his alleged inadequacy, arranged for him to undergo a written examination in order to "prove" his professional incompetence.

Hasan Ikhfa recounted this incident in his poems with an ironic tone as follows: "This man summoned me and dictated a spelling exercise at the level of the third grade of primary school, saying, 'My boy, it turns out you have no education.' When the exercise proved to be correct, he became embarrassed and said, 'Well, no - seems you do know something after all…'"

One of the satirical poems he dedicated to the officials of that period:

"Berekallah, maşallah, aferin raykom bala,
Lazımi suretdə var imiş ihtiraetin senin,
Nögteyi-Ağcabedi seyinle nurlandı aceb,
Bu Kebirli halqını alim edib, zatın senin."

(Berekallah, maşallah, well done, young man of the district committee,
Your inventions evidently exist in the proper measure;
The Aghjabadi point has been illuminated by your actions, astonishingly,
You have made the people of Kebirli learned; it is thanks to you.)

Regarding the Head of Public Education, he composed the following verses:

"Yokdur savadım menim, neyleyim Güller hanım?
Dahi cezana gelib tenelerinden canım,
Acizim, ey acizim, bir iş gelmir elimden,
Bir kes eşitmez o cür remzli söz dilimden,
Bisavadam, bisavad, biclik ile yok işim,
Bu sebebe galmayıb şimdi ağızda dişim."

(I have no education, what can I do, Lady Güller?
Alas, my soul suffers from your rebukes.
I am helpless, oh helpless, nothing comes from my hands,
No one can understand such symbolic words from my tongue.

I am unlettered, unlettered, my work is gone with ignorance,

For this reason, my teeth now remain untouched in my mouth)

After his assignment in the Aghjabadi district, he was appointed to the Aghdam district, where he continued his teaching activities and periodically published articles in the newspaper Lenin Yolu.

Hasan Ikhfa Alizade passed away in 1972. His grave is located in the "Mirze Hasan" cemetery in his native city of Shusha.

The Works of Hasan Ikhfa Alizade

Hasan Ikhfa Alizade's rich literary legacy encompasses theatrical works, stories, poems, translations, articles, letters, and historical texts written in various genres. A significant portion of his works is preserved at the National Archive of the Republic of Azerbaijan and at the M. Fuzuli Manuscripts Institute of the Azerbaijan National Academy of Sciences.

Materials comprising 18 files have been collected at the National Archive. This collection includes not only the author's works but also various photographs, official documents, and draft copies of some of his writings. The documents pertaining to Alizade have been classified according to two separate inventory lists: the first list, containing 870 items, was submitted to the Central State Archive of Literature and Art of the Azerbaijan SSR on 15 May 1970, while the second list, containing 10 items, was submitted on 10 October 1989. The first list covers the period 1914–1970, and the second list covers 1964–1966 (Göstərici, 2020, p. 306).

Among the manuscripts preserved at the M. Fuzuli Manuscripts Institute of the ANAS are: Mekr-i Zenan (registration no. B-3354/4979), Mektublar (registration no. B-3360/4985), Ziver ve Gonşuları (registration no. B-3361/4986), Melahet ve Letafet, Evlenmek (registration no. B-3364/4989), Ciddi Manzumeler (registration no. B-3365/4990), and The History of the City of Shusha (registration no. B-4556/6181).

Theatrical Works

Hasan Ikhfa Alizade's verse tragedy Balahanım consists of five acts and seven scenes. The work addresses the social and political events in the Karabakh region between 1914 and 1920, focusing on the peasants' struggle against the oppression of local khans. The play foregrounds the village's socio-economic conditions, Enlightenment ideas, post-revolutionary changes, the construction of a school building, and the exaltation of ideals of freedom.

The three-act musical Mekr-i Zenan was staged in 1917. The work critiques the main character, Molla İbrahim, for his lack of education and superstitious practices. A scene depicting the servant Ceferali's property being reclaimed from Molla holds particular importance as a denunciation of such superstition. This work should not be confused with Ahmet Gemerli's work of the same name. Alizade's comedy is written with an Enlightenment-oriented stance, opposing religious fanaticism and ignorance.

The four-act operetta Namerd-i Ruzigar focuses on the critique of a miserly merchant. The main plot revolves around Haji Semed's behavior contrary to humanistic and family values and his subsequent loss of property to his debtor, Rzagulu. This work was staged in 1916.

In addition, stage works such as Ferhad ve Şirin (1915), the two-act comedy Alesger, and the one-act operetta Muhammedali Sultanmecid Fegirleri are also important examples of the author's theatrical corpus.

Stories

Hasan Ikhfa Alizade compiled his stories in a notebook titled Namus. Among these are Eshref ve Suleyman, Melahet ve Letafet, Bizim Necabetli Han, and Ahter Hanım ve Gonşuları. The story Ahter Hanım ve Gonşuları has occasionally appeared in manuscripts under the titles Namuslu Qız and Ziver ve Gonşuları. In addition, a separate story entitled Evlenmek is also preserved.

Poems and Translations

Alizade's poetic legacy includes numerous works such as Tahmis-i Füzuli, Oturag, Ele Düşdü, Dolaşma, Sahib-i Ali, Bak, Akşam, Deliyem, Garğa ve Balıg, Behr-i Tevil, Ruh-i Revanım Ahmed, and Banla Daha. He also translated several rubai by Baba Tahir Uryan from Persian into Azerbaijani, preparing accompanying lexical and terminological notes. Additionally, the author compiled various riddles, bayati (folk couplets), and proverbs, organizing them alphabetically.

Historical Works

Hasan Ikhfa Alizade's most significant historical studies are The History of the City of Shusha and its continuation, The Historical Monuments of the City of Shusha. In The History of the City of Shusha, the author focuses on the political and cultural past of the city and indicates at the conclusion of the work that he intends to prepare a separate study on its historical monuments (Alizade 12a).

To this end, he compiled a separate notebook entitled The Historical Monuments of the City of Shusha, although this notebook remains incomplete. In it, Alizade provides detailed information about the Khan's Divankhane, the arsenal, the prison, as well as various mosques and caravanserais in Shusha, noting that some of these structures have since disappeared.

A notable feature of this work is the inclusion of inscriptions from the Juma Mosque (Yukhari Masjid), Ashaghi Masjid, and Mescid-i Aksay-i Huseyniyya, presented along with their translations from Persian into Azerbaijani Turkish.

Hasan Ikhfa Alizade's Work the History of the City of Shusha

The manuscript entitled The History of the City of Shusha, registered under archival number B 4556/6181 at the M. Fuzuli Manuscripts Institute of the Azerbaijan National Academy of Sciences, belongs to Hasan Ikhfa Alizade. The work consists of two notebooks, each measuring approximately 17.5 × 20.5 cm, and is preserved in a light gray cardboard folder.

The text was copied in 1960 into an ordinary school notebook, written in a tahriri hand with purple ink. The headings within the manuscript are written in different colored pens-red, green, blue, brown, and orange.

The work opens with a poetic introduction by the author, beginning with the following couplets:

Zahid, deme: dünya ne senindir, ne menim!
Sen sevmediğin cümle bu yerler vatanımdır.
Vermem vatanın bir karışın yadlara asla,
Şefkatli anamdır, bu benim besleyenimdir.

(O ascetic, do not say: the world belongs neither to you nor to me!
All these lands, which you do not love, are my homeland.
I will never give an inch of the homeland to strangers;
It is my compassionate mother; it is she who nurtures me.)

Following the poem, the notebook contains the Introduction and Preface sections. After the preface, which presents the author's general reflections on the city of Shusha, the main text of the work begins. The first notebook covers historical events between 1747 and 1805, while the second notebook addresses the period from 1805 to 1923.

Notebook I is divided by the author into three main sections. At the beginning of each section, there is a kind of table of contents reflecting its content:

Section I – Introduction:

"Brief information on the state, administrative structure, and construction activities of the Karabakh Khanate before the foundation of the city of Shusha"

Preface (by the author)

Who is Panah Khan? (origin and lineage)

Panah Khan's construction activities:

- Bayat Fortress
- Shah Bulagı (Ternegut) Fortress

Section II – The City of Shusha:

Discussions and decisions

Construction of the city (naming, administrative organization, and laws)

Architectural structure of the city

Geographical location of Shusha

Section III – Historical Events (Panah Khan Period):

The attack and defeat of Muhammad Hasan Khan Qajar

The betrayal and hostility of Georgian Prince Irakli II; assistance of Haji Chelebi

The attack, defeat, strategy, and consequences of Fathali Khan Afshar

In this section of the manuscript, the author attempts to narrate historical events in a literary style, occasionally including poetic excerpts.

Notebook II serves as a logical continuation of the first notebook and is likewise organized into three main sections:

Section IV – Russian Empire Period (1805–1917)

Section V – Shusha After the Treaty of Turkmenchay (1828–1917)

Section VI – Events of 1918–1920 and the Burning of Shusha.

The work presents the historical development stages of the city of Shusha from the author's nationally conscious and patriotic perspective, addressing political events alongside architectural and cultural contexts in detail. This manuscript is considered a valuable source that unites Hasan Ikhfa Alizade's literary and historical perspectives.

In the History of the City of Shusha, Hasan Ikhfa Alizade pays attention not only to political and military developments but also to the scientific, cultural, and artistic life of the city. The author mentions the names of several prominent poets, writers, and musicians who lived in Shusha and provides examples from their works. These details demonstrate that the city's history is rich not only politically but also culturally and spiritually.

In preparing the work, Hasan Ikhfa Alizade relied on various historical sources. According to his own account, the foundational references included Mirza Jamal Javanshir's History of Karabakh, Mirza Adigozal Bey's Karabaghnama, Abbasgulu Agha Bakikhanov's Gulistan-i Irem, Mehmed Hasan Bey Baharly's History of Azerbaijan, and Rashid Bey Ismailov's History of Azerbaijan, along with History of Iran, History of the Caucasus, and several other sources (Alizade, 1960, p. 4a).

In addition, the author approached certain sources with a critical perspective. In particular, he evaluated Ahmed Bey Javanshir's work as insufficient and biased, stating: "In the recently acquired small booklet entitled 'Âsâr-ı Ahmed Bey' (not yet published), we read quite interesting accounts. Even if this book were to be published, it cannot be considered valuable because it was written under the influence of two different factors" (Alizade, 1960, p. 38a).

At the same time, Hasan Ikhfa Alizade also drew directly on oral sources. He indicates that he relied on information provided by a man named Meshadi Ali, who lived in Shusha and had reached over 100 years of age. Meshadi Ali offered the author certain details about the history of Karabakh and stated that, although he did not personally witness events such as the deaths of Molla Panah Vagif and Mehmed Bey, he had learned about them from his elders (Alizade, 1960, pp. 37b, 38a).

The section of the work covering the years 1905–1920 is based directly on the author's personal observations. Having witnessed the social and political developments of this period, Hasan Ikhfa Alizade describes the events drawing on his own experiences.

Although the author drew on previously written Karabagnames, he disagreed with certain views and therefore decided in 1960 to compose The History of the City of Shusha as an independent work. By that time, Mirza Adigozal Bey's Karabaghnama (1950) and Mirza Jamal Javanshir's History of Karabakh (1959) had already been published.

Alizade wished for his work to be published and, for this purpose, prepared it in two notebooks and submitted it in 1960 to the History Institute of the Azerbaijan SSR Academy of Sciences. The manuscript, examined by the institute, was deemed unsuitable for publication. Consequently, in 1961, the author appealed to the Central Committee of the Communist Party of the Azerbaijan SSR. On his initiative, a commission was established to evaluate the work, and Hasan Ikhfa Alizade personally participated in these deliberations.

The commission members concluded that the work was generally not suitable for publication; however, considering the author's effort and some valuable historical information contained in the manuscript, they decided to pay him an honorarium of 100 manat and to preserve the work in the institute's archive.

This episode reflects not only Hasan Ikhfa Alizade's scholarly and historical legacy but also the official attitude of the period and the inherent limitations of the publishing policies of that time.

Hasan Ikhfa Alizade's work The History of the City of Shusha was first published in summarized form in the third volume of the Karabagnames compilation, which appeared in 2006. This three-volume collection was prepared for publication by Nazim Ahundov and Akif Ferzeliyev, systematically organizing and presenting Karabagnames authored by various writers. In this edition, materials from Hasan Ikhfa Alizade's personal archive, preserved at the National Archive Department of the Republic of Azerbaijan, were utilized. However, it should be noted that these documents were not systematically organized, were often in draft form, and were found in a disordered state.

The notebooks written in the author's own hand and preserved at the Mehmed Fuzuli Manuscripts Institute of the Azerbaijan National Academy of Sciences had not previously been the subject of scholarly study. In this work, they are presented for the first time and made accessible to the public.

In the introduction to his work, Hasan Ikhfa Alizade expresses his profound sense of belonging to the city of Shusha and his love for the homeland in a highly literary style:

"Shusha! How dear, native, gentle, and beloved a name, how beautiful and kind a mother - 'Homeland,' how enchanting a place that it has always been my most sacred duty to kneel before this beautiful name and respectfully kiss the 'earth beneath it,' and for its sake to give up everything - life, property, existence, and more; to be stained with red blood, to perish - this has been for me the most sacred happiness and honorable state" (Alizade, 1960, p. 3a).

In his work, the author emphasizes that, despite its geographically small area, Shusha became a leading cultural center in the South Caucasus from the second half of the 19th century onward. He highlights the city's influence in literature, music, and the arts, noting that the intellectuals, poets, teachers, and artists raised there were distinctly distinguished from those in other regions of Azerbaijan.

A defining feature that sets Hasan Ikhfa Alizade apart from previous Karabagnames authors is his holistic approach to historical periods. Alizade documents not only the khanate era and Tsarist Russia but also the Soviet period, particularly recording the provocations and tragic events carried out by Armenian armed groups in 1905 and 1918.

The author states his purpose in the work as follows: "In this small work, I will record the joyful and prosperous days that our Shusha has experienced from the day its first cornerstone was laid (1747) until today, as well as its painful, unfortunate, sorrowful, and tragic periods" (Alizade, 1960, p. 4b).

Hasan Ikhfa Alizade cites different dates regarding the founding of the city of Shusha. On page 16a of the manuscript, it is noted that the city's foundations were laid in 1752 and that the urbanization process was completed in 1754; however, on page 18b, the founding date is directly given as 1754. In the introduction, the date is recorded as 1747. This discrepancy likely arises from the author's consideration of the establishment of the Karabakh Khanate separately from Shusha's formation as an administrative center.

For comparison, in the first volume of the Karabagnames compilation, citing Mirza Adigozal Bey, the foundation of Shusha is stated to have occurred at the end of 1751 or the beginning of 1752 (Karabagnames, p. 48). In Tofiq Mustafazade's work The Karabakh Khanate, it is indicated that the foundations of Shusha Fortress were laid in 1753 - 1754, and the construction was completed in 1756 - 1757 (Mustafazade, 2005, p. 39).

When composing The History of the City of Shusha, Hasan Ikhfa Alizade relied not only on written sources but also on oral testimonies. He considered information obtained from a man named Meshadi Ali, who had lived in Shusha for over a century, as an important source. This informant admitted that he had not personally witnessed events such as the deaths of Molla Panah Vagif and Mehmed Bey, but shared what he had learned from the elders of his time. Events covering the years 1905 - 1920, however, are documented directly based on the author's own personal observations.

Hasan Ikhfa Alizade's The History of the City of Shusha is not merely a historical chronicle; it is also a valuable scholarly work that reflects the author's national consciousness, literary imagination, and extensive use of source material. His contribution to the Karabagnama tradition can be regarded as a significant resource for both historiography and cultural heritage within the scientific and ideological frameworks of his era.

Hasan Ikhfa Alizade's work begins with the political activities of Panah Khan. The author notes that during the formation of the khanate, Panah Khan commissioned the construction of the Bayat and Shahbulak fortresses and later issued coins in his name, called "Penahabad" and "Penavat." These details demonstrate the author's effort to address not only the political process but also the economic and monetary aspects in a comprehensive manner.

The author also provides a notable etymological explanation regarding the name of Shusha. According to him, the city's name is linked to the village of "Shushu." Initially, this settlement was called "Shushu Fortress" or "Shushu City," which over time became "Shushi." Subsequently, the expression "Shahr-i Shushi" became common; this form evolved first into "Shushe," then under Persian influence into "Shishe," and finally stabilized in Azerbaijani Turkish as "Shusha." The author supports this linguistic development with examples from classical poetry.

Şehri-Şişe ki, aceb âb u havası dâred,

Hurram onki baserî-kûyi o câyi dâred.

(The city of Shishe possesses such wondrous water and air,

Its streets and alleys are lively and full of charm).

- M.Q.H.-Vefa

Şişede, Şirvan'da vurur tek sebir. (in Shishe, one sneezes, as in Shirvan).

- M.A.Sabir (Alizade, 1960, s.12b).

These couplets are presented as examples supporting the etymology proposed by the author regarding the historical and literary use of the toponym "Shusha."

In the section on architecture, Hasan Ikhfa Alizade notes that the general structure of Shusha reflects the style of Iranian architecture. However, this view is scientifically debatable. Contemporary research shows that Shusha's architecture primarily embodies local architectural traditions specific to the Karabakh region. While this style incorporates elements of Eastern architecture, it is enriched by local construction techniques and decorative features.

One of the leading representatives of this architectural school was the architect Kerbelayi Sefihan Karabagi. The Lower Govhar Agha Mosque (1889 - 1890), madrasas, neighborhood mosques, mansions, baths, and other structures he built in Shusha are considered among the pinnacles of Karabakh architecture. Kerbelayi Sefihan demonstrated exceptional skill in combining the classical constructive elements of Eastern architecture with local materials and architectural styles (azerbaijan-news.az).

The architectural features and general cityscape of Shusha were also documented by travelers and visitors in the 19th century. For example, some articles published in the Kavkaz newspaper describe the city as follows: "Among the various houses and residences in the city, the mansions inhabited by members of the khan's family immediately attract attention: these structures possess a distinctive character. They are surrounded by high walls with circular towers at the corners" (Gazeta Kavkaz, 1857).

Hasan Ikhfa Alizade's work The History of the City of Shusha is not limited to the chronological and political description of events; it also provides valuable information on the city's cultural, ethnographic, and architectural heritage. At times, the author's assessments, based on personal observations and local accounts, make this work a significant source for both historical research and the study of intellectual history.

In his manuscript The History of the City of Shusha, Hasan Ikhfa Alizade provides a detailed and locally enriched description of the city's geographical location. According to the author, Shusha is bordered to the south by Jidir Plain, Uçmıh hills, the Boyuk Dashalti stream, and Kirs Mountain; to the north by Dovteleb hill, Halifeli stream, Halifeli village, and the Mikhtoken mountain slope; to the west by the villages of Zarisli and Galaderesi, Turshsu, and Sagsaganli Mountain; and to the east by Shushakend, Bagirgan (or Bağirkhan) Mountain, Topkhana forest, and Hazine rock (Alizade, 1960, p.14a). This geographic framing demonstrates that the work is also a valuable resource for local history and topography.

At the end of the first notebook, the author transitions to topics of science, culture, literature, and art, presenting biographical information about some poets who lived in Shusha and including examples of their poetry. For instance, a poem written by Ağabeyim Ağa of the Khan family expresses his longing for Karabakh:

Men aşıkem, Karabağ,
Yağışa bak, kara bak,
Tehran cennete dönse,
Yaddan çıkmaz, Karabağ.
(I am a lover, Karabakh,
Look at the rain, look at the snow,
Even if Tehran turns into paradise,
It will never be forgotten, Karabakh).

"Agabeyim Aga Jevanşir, the aunt of Khurshudbanu Natavan (d. 1897), one of Azerbaijan's esteemed intellectuals, gained renown in Karabakh for his beauty, eloquence, diplomatic skills, and especially his poetic talent" (Rahimova, 2024, p.1030).

This perspective demonstrates that the author approaches history not only from political and military aspects but also from a cultural standpoint.

The second notebook consists of three main sections:

IV – The Russian Empire Period (1805–1917),

V – Shusha After the Treaty of Turkmenchay (1828–1917),

VI – Selected Events (1918–1920).

In this notebook, the author records historical developments up to 1923, giving particular emphasis to the destruction carried out by Armenian armed groups against Azerbaijani Turks in 1918. At the end of the work, he returns to Shusha's achievements in culture, music, and the arts, providing information on the creations of various artists and musicians.

Nevertheless, some historical details in the text lack precision. For instance, on page 19b, Talish Melik, Melik Usub, one of the Hamse rulers, is erroneously identified as the Melik of Chilebord (Alizade, 1960, p.19b). Additionally, the association of Shusha's architectural style with Iranian architecture (Alizade, 1960, p.13a) and the transcription of the famous tar player Sadıqjan's name as "Sadıqja" are other inconsistencies. Such errors likely reflect the author's limited access to archival sources at the time and the reliance on oral accounts for some information.

When uncertain about certain details, Alizade marks these entries with parentheses and question marks. This practice indicates that the author approached some information with caution, possibly intending future verification, or leaving the judgment to the reader. Examples of such uncertainties include the date of Panah Khan's death, İbrahim Khan's stance toward the Russians, and the exaggerated depiction of some events (Alizade, p.21a).

Conclusion

In the third volume of the compilation Karabağnameler, Nazim Ahundov, who prepared this work for publication, notes that many Azerbaijani intellectuals attempted to write the history of Karabakh during the 19th century and the early 20th century. He emphasizes the significance of these publications, mentioning Hasan Ikhfa Alizade by name, both in terms of historical interest and as evidence of the deep attention Azerbaijani intellectuals paid to the history of the Karabakh Khanate (Karabağnameler, 2006, p.184).

Hasan Ikhfa Alizade's approach to events largely stems from his perspective as a literary figure and cultural promoter. He often presents historical events in a narrative style, drawing on the techniques of storytelling. One aspect that makes his work particularly valuable is that the author personally witnessed certain events, describing them in the first person. Alizade aimed to provide a comprehensive and multifaceted panorama, encompassing not only political history but also the socio-cultural, literary, and architectural heritage of Shusha. This characteristic renders his work a valuable resource not only for historiography but also for cultural studies and urban history.

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PHILOSOPHICAL SCIENCES

НАЗВАНИЯ ФИТОНИМОВ В ГЕОЛОГИЧЕСКОЙ ТЕРМИНОЛОГИИ НА МАТЕРИАЛЕ РУССКОГО И АЗЕРБАЙДЖАНСКОГО ЯЗЫКОВ

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THE ROLE OF PHYTONYMS IN GEOLOGICAL TERMINOLOGY OF THE RUSSIAN AND AZERBAIJANI LANGUAGES

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Аннотация

Основная цель данной статьи заключается в проведении сравнительного анализа роли фитонимов (названий растений) и механизмов терминообразования в геологической терминологии русского и азербайджанского языков. Исследование демонстрирует, что фитонимы активно участвуют в формировании терминов в различных областях науки, включая медицину, фармакологию, геологию и минералогию. Ключевой функцией фитонимов является роль когнитивной метафоры, при которой форма, цвет или структура растения переносятся на геологический объект (например, дендрит).

Фитонимы в русском языке обладают более высокой продуктивностью в аспекте терминообразования, охватывая многочисленные интернациональные, а также этнокультурные термины. Основными моделями метафорического переноса в русском языке являются: сходство формы (каменная роза), цветовой эталон (арбузный турмалин) и состав (метонимия: еловый торф).

В азербайджанском же языке терминообразование опирается как на интернациональную, так и на национальную лексическую базу. Своеобразие проявляется в таких терминах, как ağacvari (дендрит) и yarpaqvarilik (листоватость/слоистость), производных от национальных лексических образов.

Abstract

The primary objective of this article is to conduct a comparative analysis of the role of phytonyms (plant names) and the mechanisms of term formation in the geological terminology of the Russian and Azerbaijani languages. The study demonstrates that phytonyms actively participate in the formation of terms across various scientific fields, including medicine, pharmacology, geology, and mineralogy. The core function of phytonyms is that of a cognitive metaphor, where the form, color, or structure of a plant is transferred to a geological object (for example, dendrite).

Phytonyms in the Russian language are more productive in terms of term formation, encompassing numerous international, as well as ethnocultural terms. The main models of metaphorical transfer in Russian are: similarity of form (kamennaya roza – *stone rose*), color standard (arbuznyy turmalin – *watermelon tourmaline*), and composition (metonymy elovyy torf – *spruce peat*).

In the Azerbaijani language, term formation utilizes both international and national lexical bases. Its distinctiveness is manifested in terms like ağacvari (dendrite) and yarpaqvarilik (foliation/leaf structure), which are derived from national lexical images.

Ключевые слова: фитонимы, терминообразование, когнитивная лингвистика, сравнительное языкознание, русский язык, азербайджанский язык.

Keywords: phytonyms, term formation, cognitive linguistics, comparative linguistics, Russian language, Azerbaijani language.

Как известно, изучение взаимосвязи между гносеологическим и лингвистическими картинами мира является актуальным направлением, обеспечивающим результативность в терминологических исследованиях. Изучение источников и путей формирования профессионального подъязыка, таких как геологическая терминология, выявляет глубинные концептуальные модели, лежащие в основе наименования. В этом аспекте одним из продуктивных источников пополнения геологической терминологии является фитонимическая лексика. Зачастую при лексическом переносе первичных значений на геологическую терминологию, фитонимы начинают служить средством метафорического наименования объектов, структур и процессов.

Актуальность настоящего исследования обусловлена необходимостью систематизации и глубокого сопоставительного анализа пласта фитонимов в геологической терминологии русского и азербайджанского языков, поскольку данный материал до сих пор не был предметом комплексного двуязычного исследования.

Цель данной работы состоит в выявлении, классификации и проведении сравнительного анализа фитонимов, используемых в геологической

терминологии русского и азербайджанского языков, с целью определения общих и национально-специфических черт в процессе терминообразования.

«С каждым исторических этапом развития геологии лексический состав языка, а также лексические единицы геологической терминологии увеличиваются. Геологические термины изучают:

1. минералы природного происхождения и искусственно образованные;

2. природные явления и процессы;

3. искусственно вызванные природные явления, искусственные процессы.

С каждым увеличением знаний потребность в терминах увеличивается, что восполняется за счет заимствований терминов из других областей знаний и в определенной мере удовлетворяется образованием новых терминов. Увеличение геологических терминов тесно связано с развитием лексического фонда русского языка» [1].

В формировании геологической терминологии, как и в других естественнонаучных областях, доминирующую роль играет когнитивная метафора. Согласно положениям когнитивной лингвистики [3], метафора представляет собой не просто языковое украшение, а способ мышления, структурирующий абстрактные понятия через конкретные.

В ходе исследования нами выявлены определенные подгруппы фитонимов, в которых участвуют в образовании геологических терминов. Рассмотрим конкретные примеры:

Деревья:

Гипероним дерево: красное дерево горное – обсидиан с чёрными и красными полосами; опал древесный – ложный кристалл, с полосатым рисунком, окрашенным по цвету ствола дерева; опал деревянистый – опал с полосами древесной коры, коричневого оттенка;

Бамбук: бамбуковый жемчуг – полудрагоценный камень, находящийся между стволами бамбука; бамбуковый опал – полудрагоценный камень, встречающийся в коленах бамбука.

Пальма: жемчуг пальмовый – жемчуг, находящийся в коре кокосового дерева;

Ель: еловый торф – разновидность торфа, в большем процентном отношении, содержащая в себе кору и древесину ели.

Цветы:

Гипероним цветы: цветок железные цветы – арагонит, с переплетенными образованиями в форме стеблей (минерал, образующий игольчатые и копьевидные кристаллы – А.С.); обсидиан цветковый – чёрный обсидиан с формами лепестков; янтарь цветочный – природный янтарь, на поверхности которого в результате медленного нагревания в веретенном масле, а затем быстрого охлаждения образуется сеточка трещин, благодаря чему появляются эффектные радужные вспышки; яшма цветочная – яшма с цветным рисунком, напоминающим снежинки или морозные узоры на стекле; рудный цветок – шпак плавиковый;

Роза: инсакская роза – минерал розового цвета; каменная роза – роза пустыни – сростки кристаллов гипса, которые образуются в слое песка, захватывая при кристаллизации его мельчайшие частицы; роза железная - ильменит, напоминающий розу; роза инков – минерал розового цвета; роза песков – роза песчаная – роза пустыни; роза Франции – розово-фиолетовый аметист***;***

Ирис: ирис – кварц. В древности и средневековье использовался как магический камень; ирис-агат – агат радужный;

*Гиацинт**:*** шпинель гиацинтовая – гиацинт-шпинель, рубицелл;

Овощи:

Огурец: огурец жемчужный – овальный жемчуг. название диалектное – Олонецкое.

Аспарагус: камень аспарагусовый – жёлто-зеленые кристаллы апатита;

Горох: камень гороховый – разновидность арагонита (минерал - Г.А.) различных размеров;

Спаржа: камень спаржевый – светло-зеленый апатит;

Артишок: кварц артишоковый –горный хрусталь;

Ягоды:

Крыжовник: крыжовниковый гранат – гранат редкого цвета крыжовника; камень крыжовниковый – зелёный гроссуляр (название гроссуляр произошло от латинского названия крыжовника по специфической окраске этого камня).

Малина: малиновый гранат – гранат цвета малины.

Арбуз: арбузный турмалин – полихромная разновидность природного минерала имеет красную или розовую середину в окружении зеленой каймы. Такая уникальная окраска, напоминающая арбуз, и стала причиной названия кристаллов.

Фрукты:

Вишня: жемчуг вишенный – жемчуг размером с вишню;

Мандарин: мандариновый гранат – разновидность граната оранжевого, оранжево-красного, коричнево-красного или желтого цвета;

Различные:

Мох: моховой агат – дендритовый агат – мокка-агат – дендритовый камень – моккский камень – моховик — одна из природных разновидностей кремнезёма. Ювелиры называют моховым агатом также разновидности халцедона без явной слоистости, но с различными включениями, создающими конкретный рисунок. Зелёный моховой агат – это агат с хлоритовыми включениями, образующими узор, напоминающий мох; яшма моховая – 1. моховой агат 2. окаменелое дерево с жилками просвечивающего кварца;

Хлопок: мячики хлопковые – народное название улексита (природный минерал – А.Г.);

Таким образом, мы можем определить следующие три модели формирования терминов:

I. По форме и структуре: наиболее часто фитоним используется для передачи сложной кри-

сталлической морфологии или текстуры геологических объектов, недоступной для простой геометрической номинации.

Форма растения целиком: Термины, такие как «кварц артишоковый» (горный хрусталь), «железные цветы» (арагонит), «каменная роза» и «роза пустыни» (сростки кристаллов гипса), демонстрируют перенос сложной, многолепестковой структуры растения на минеральный агрегат.

Текстура растительного материала: В петрографии и геммологии фитонимы используются для обозначения специфической текстуры, схожей с растительной. Например, «опал древесный» и «опал деревянистый» отсылают к полосатому рисунку и коричневому оттенку древесной коры или ствола, что является переносом “растение - внутренняя структура".

II. По цвету. Фитонимы, определяющие по цвету, являются распространенной мотивирующей основой в геммологии, где требуется высокоточная и образная дифференциация оттенков [4]. Фрукты и ягоды выступают в качестве культурно-закрепленного эталона цвета: термины «крыжовниковый гранат» (зеленый гроссуляр), «малиновый гранат» и «мандариновый гранат» используют фитоним для точного обозначения специфического цветового спектра минерала. Особый интерес представляет термин «арбузный турмалин». Здесь метафора усложнена тем, что она основана не на одном признаке, а на сочетании цвета и структуры (розовая середина, окруженная зеленой каймой), что точно повторяет срез плода.

III. По происхождению и составу: данный тип переноса не является метафорой в чистом виде, а представляет собой метонимию. Термин «еловый торф» прямо указывает на доминирующий растительный материал, из которого образовалась порода. Номинации, связанные с инклюзиями, такие как «моховой агат» (моховик) или «яшма моховая», используют фитоним (мох) для обозначения внешнего вида инородных включений (чаще хлоритовых), которые выглядят как инкапсулированные фрагменты растительности.

Особый интерес для сопоставительного анализа представляет пласт терминов, которые формируются не путём прямого калькирования или заимствования, а на основе исконных азербайджанских фитонимических основ. Эти лексемы демонстрируют использование национального лексического фонда для метафорического кодирования универсальных геологических явлений. Рассмотрим конкретные примеры:

I. **По морфологии и структуре:** фитонимы используются для описания сложной морфологии минеральных агрегатов, где наблюдается перенос из области живой природы на неорганические объекты:

Ağacvari (от ağac — дерево). Данный термин, применяемый для описания дендритных (древовидных) форм кристаллов (например, пиролюзита), является чистой метафорической номинацией, использующей исконный корень. Это функциональный эквивалент греко-латинского «дендрит», что подтверждает универсальность когнитивной модели "дерево - разветвление".

Yarpaqvarilik (от yarpaq — лист). Термин, обозначающий листоватую текстуру горных пород (способность расщепляться на тонкие пластины). Здесь исконный фитоним выступает как основа для образования абстрактного существительного, описывающего текстурное свойство.

Noxud daşı (от noxud — горох). Этот термин, используемый для обозначения шаровидной разновидности арагонита, является примером метафоры по форме, где объектом сравнения выступает плод культурного растения, что характерно для народной геммологической номенклатуры.

II. По ассоциации: часто используется для наименования камней с особыми внутренними включениями, напоминающими растительность:

Mamır aqatı (от mamır — мох). Данный термин, обозначающий моховой агат, основан на зрительной аналогии: включения хлорита или других минералов внутри халцедона формируют рисунок, напоминающий разросшийся мох. Это пример устойчивой метафоры, где фитоним используется как дескриптор внутренней структуры камня.

Səhra gülü (от gül — роза/цветок). Метафорический термин, обозначающий специфические сростки кристаллов гипса (роза пустыни). Использование исконного слова gül для описания сложной лепестковой формы кристаллического агрегата свидетельствует о высокой степени наглядности и образности, заложенной в термине.

Проведенный сопоставительный анализ фитонимической лексики в геологической терминологии русского и азербайджанского языков подтверждает гипотезу о высокой продуктивности метафорического переноса как ключевого механизма терминообразования в данной сфере. Фитонимы функционируют как универсальные когнитивные шаблоны, обеспечивающие наглядность и образность при номинации сложных геологических объектов, форм и структур.

В ходе исследования выявлены следующие особенности:

1. Универсальность метафорических моделей: в обеих терминосистемах доминируют общечеловеческие когнитивные модели, основанные на сходстве по форме (ağacvari, дендрит, səhra gülü) и цвету (арбузный турмалин, мандариновый гранат). Фитоним выступает как наглядный, интуитивно понятный визуальный код, который значительно упрощает кодирование сложной геологической информации.

2. Национально-культурная специфика терминогенеза: русская терминология преимущественно использует интернациональные (греко-латинские) корни в составе сложных слов и образную лексику (роза пустыни, железные цветы) для описания форм. Азербайджанская терминология демонстрирует тенденцию к использованию чисто национальных, исконных фитонимических основ (ağacvari, yarpaqvarilik, noxud daşı) для создания собственных мотивированных эквивалентов. Это подтверждает активную роль национального языкового сознания

в процессе адаптации универсальных научных понятий.

3. Многоаспектность переноса: фитонимическая лексика задействует полный спектр мотивирующих признаков: от морфологических (Kök / Корень — для обозначения опоры), до текстурных (Mamır aqatı / Моховой агат — для описания включений) и признаков состава (еловый торф — как метонимия происхождения).

Результаты исследования позволяют заключить, что при всей универсальности геологического знания, его вербализация в русском и азербайджанском языках осуществляется через механизмы, которые отражают как общелингвистические законы метафоризации, так и специфику национальной лексической базы.

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PSYCHOLOGICAL SCIENCES

ORGANIZATIONAL SILENCE AS A PREDICTORS OF WORKPLACE BULLYING AMONG NURSES IN SOUTH-WEST NIGERIA

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Abstract

This study investigated antecedents and consequences of workplace bullying among nurses in Hospitals in South-West Nigeria. Essentially, bullying at workplace has been seen a hot topic discussed frequently throughout the developed world. The study utilized an *Ex-Post Facto* Design which is suitable for investigating variables where manipulation is not ethical and particularly appropriate for examining the influence of organizational silence on workplace bullying among nurses in South –West Nigeria.

The findings of the study revealed that the tested hypothesis indicated that a significant prediction of workplace bullying by the organizational silence variable. The F-statistic of F (1, 418) = 114.258, P<.05; R=.22).

The study concluded that organizational silence significantly predicted workplace bullying among nurses in South-West Nigeria.

Keywords: Organizational Silence, Workplace Bullying, Nurses, South-West.

INTRODUCTION

Globally, the phenomenon of workplace bullying has been conceptualized and studied using various terminologies, reflecting its complex and multifaceted nature. Terms such as "mobbing" (Leymann, 1990) and "harassment" (Bjorkqvist, et al., 1994) are commonly used in Europe, while "workplace aggression" is prevalent in American literature (Baron & Neuman, 1998). In Australia and the United Kingdom, "workplace bullying" is widely adopted to describe persistent negative behaviors aimed at undermining individuals or groups (Einarsen & Skogstad, 1996). While terminologies vary, they converge on characteristics of bullying: repetition, intentionality, and a power imbalance between the perpetrator and the target.

Nurses in Nigeria are particularly vulnerable to workplace bullying due to the demanding nature of their profession. As the backbone of healthcare delivery, nurses perform critical roles that require constant interaction with patients, families, and colleagues under often stressful and resource-limited conditions. These challenges are exacerbated by systemic issues, including poor staffing ratios, inadequate managerial support, and limited access to resources, which can fuel interpersonal conflicts and toxic workplace behaviors (Hutchinson, et al., 2010; Kivimaki, et al., 2003).

At the organizational level, workplace bullying contributes to increased absenteeism, higher turnover rates, and reduced job satisfaction, all of which undermine workforce stability and productivity. Studies have shown that nurses exposed to bullying are more likely to exhibit symptoms of burnout, characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment (Laschinger & Grau, 2012). These outcomes not only compromise patient care but also place additional strain on an already overburdened healthcare system, with cascading effects on patient outcomes and organizational performance (Houck, et al., 2017).

Despite the global recognition of workplace bullying, its prevalence and impact within Nigerian healthcare settings remain underexplored. Studies from other countries suggest that up to 40% of nurses experience workplace bullying (Trépanier, et al., 2019), with healthcare workers being particularly vulnerable due to the high-stress nature of their work. In Nigeria, the situation is likely exacerbated by systemic challenges, including underfunded healthcare facilities, high patient-to-nurse ratios, and cultural attitudes that may tolerate or even encourage hierarchical bullying.

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The hierarchical structure of healthcare institutions further exacerbates the issue. Nurses, particularly junior staff, often find themselves at the lower end of workplace power dynamics, making them susceptible to bullying by senior colleagues, supervisors and even patients. Power imbalances within these structures create an environment where bullying is normalized or dismissed as a means of "discipline" or "management" (Hutchinson, et al., 2006). In such environments, bullying behaviors may range from overt actions like verbal abuse and excessive criticism to covert acts such as exclusion from team activities or deliberate withholding of essential information.

Statement of the Problem

Workplace bullying is a prevalent psychological issue associated with various workplaces worldwide, and it remains a significant concern in healthcare settings. The healthcare sector, particularly nursing, is crucial to any nation's development, and nurses represent the largest group of healthcare professionals. Despite their essential role in delivering healthcare services, nurses are often subjected to various forms of bullying, including verbal abuse, social exclusion, and professional undermining. These behaviors not only adversely affect individual nurses but also have a profound impact on the healthcare system. The consequences of bullying in nursing are far-reaching, affecting nurses' psychological and physical health, job performance, and ultimately the quality of patient care (Favaro, et al., 2021; Elazzazy, 2023).

In healthcare settings such as Hospitals, bullying can take various forms, from overt actions such as verbal abuse and physical aggression to more covert behaviors like social isolation and undermining professional competence. Workplace bullying has been shown to lead to serious psychological distress, including anxiety, depression, burnout, and physical health problems such as headaches, gastrointestinal issues, and cardiovascular problems (Einarsen, et al., 2011; Hayes, et al., 2012). In the context of healthcare, bullying has significant organizational consequences, including increased turnover, absenteeism, and diminished work engagement, all of which hinder the effectiveness of healthcare delivery and increase costs for healthcare organizations (Clausen, Høgh, & Borg, 2012; Nielsen, et al., 2017).

Antecedents of workplace bullying refer to the factors or events that contribute to its occurrence, while consequences refer to the outcomes or effects of the bullying behavior. In the Nigerian healthcare sector, which is already under significant strain due to limited resources, high patient-to-nurse ratios, and other systemic challenges, the added burden of workplace bullying exacerbates these issues. It contributes to high levels of stress, burnout, and turnover among nurses, further weakening the healthcare system (Kivimaki, et al., 2003; Trépanier, et al., 2019). Understanding the antecedents and consequences of workplace bullying among nurses is essential to developing effective strategies for both prevention and intervention in Nigerian healthcare settings.

Research has indicated that lack of organizational support, high workload, and poor communication can contribute to a culture of bullying within healthcare settings. Nurses who feel overworked, unsupported, or undervalued are more likely to engage in bullying behavior toward their colleagues as a way of coping with stress and frustration (Golparvar, et al., 2012). Moreover, the hierarchical nature of healthcare institutions can exacerbate power imbalances, enabling senior nurses or administrators to intimidate and belittle junior staff (Leong & Crossman, 2017). This culture of bullying is not only detrimental to individual nurses but also has profound implications for the overall functioning of healthcare organizations.

Western scholars, such as Einarsen et al. (2011), have highlighted that nurses who experience bullying are more likely to suffer from anxiety, depression, and burnout, as well as physical health problems, including headaches, gastrointestinal issues, and cardiovascular problems. Workplace bullying also imposes significant costs on healthcare organizations, including increased turnover (Hayes, et al., 2012), sickness absence (Clausen, Høgh, & Borg, 2012), and disability retirement (Nielsen, et al., 2017, as cited in Conway, et al., 2021). These costs not only undermine the financial health of healthcare organizations but also contribute to a strained work environment, ultimately compromising patient care.

The problem of workplace bullying is further exacerbated by ineffective Human Resource Management (HRM) practices in many healthcare institutions. Inconsistent or non-existent policies on workplace bullying, a lack of training for staff on conflict resolution, and insufficient support for victims create an environment where bullying can thrive. These deficiencies in HRM practices fail to protect nurses and also hinder the overall effectiveness of healthcare delivery. HRM practices that are proactive in addressing bullying, such as clear anti-bullying policies, conflict management training, and robust support systems for victims, are critical for reducing workplace bullying and improving the healthcare environment (Castronova, Pullizzi, & Evans, 2016; Goh, Hosier, & Zhang, 2022).

Identifying the antecedents of workplace bullying is essential for developing preventive strategies aimed at addressing the issue and mitigating its adverse impact on both nurses' mental health and organizational productivity. Furthermore, understanding the consequences of workplace bullying will inform interventions that can improve nurses' well-being, reduce turnover, and enhance patient care outcomes (Rutherford,

Gillespie, & Smith, 2019; Pfeifer & Vessey, 2017). The results of this study are expected to provide valuable insights into how HRM practices can be used to combat workplace bullying and improve the work environment for nurses in Nigeria.

Research Questions

The research question below has been developed to guide this study and address the core objectives of understanding the organizational silence as a predictor of workplace bullying among nurses in hospital in South-West Nigeria.

i. To what extent will organizational silence show independent prediction of workplace bullying experience among nurses in hospital in South-West, Nigeria?

Objective of the Study

The objective of the studywas to:

- assess the independent prediction of workplace bullying experience by organizational silence among nurses in hospital in South-West, Nigeria;

Research Hypothesis

Organizational Silence will show independent prediction of workplace bullying experience among nurses in hospital in South-West, Nigeria.

LITERATURE REVIEW

Conceptual Review

Concept of Bullying

Bullying is a multifaceted phenomenon characterized by repeated negative actions directed toward an individual, resulting in harm, distress, or discomfort. In general, bullying involves an imbalance of power, where the perpetrator exerts control over the victim through intimidation, humiliation, or aggression (Einarsen, et al, 2011). The World Health Organization (WHO) defines bullying as "the repeated exposure, over time, to negative actions on the part of one or more other persons" (WHO, 2020). Similarly, the International Labour Organization (ILO) describes bullying as "offensive behavior through vindictive, cruel, malicious, or humiliating attempts to undermine an individual or group of employees" (ILO, 2019). Bullying can take various forms, including physical, verbal, relational, psychological, and cyberbullying (Olweus, 1993; Farley, et al., 2016).

Physical Bullying

Physical bullying involves acts of aggression that cause harm or threaten harm, such as hitting, pushing, or other physical attacks. While physical bullying is often easier to identify due to its overt nature, it can have severe long-term effects on both the physical and emotional well-being of the victim. For instance, in Nigerian healthcare settings, physical bullying might manifest when senior staff physically intimidate junior nurses, potentially leading to both psychological trauma and physical harm (Adebayo, Olatunji, & Awoniyi, 2021). This type of bullying is more obvious but can still have lasting consequences for nurses who experience it.

Verbal Bullying

Verbal bullying consists of derogatory comments, name-calling, and other persistent negative remarks designed to humiliate or degrade the victim. This form of bullying can be just as damaging, if not more so, than physical bullying, as it directly attacks the victim's self-esteem and mental health. In Nigerian hospitals, verbal bullying often occurs in hierarchical environments where junior nurses are publicly belittled by supervisors or patients, creating an atmosphere of fear and humiliation. Such verbal abuse can significantly diminish a nurse's self-worth and lead to long-term emotional distress (Smith & Thompson, 2021).

Relational Bullying

Relational bullying, also known as relational aggression or social bullying, involves actions aimed at harming a person's social relationships or reputation. It can include spreading rumors, deliberately excluding individuals from social or work-related groups, and publicly embarrassing or humiliating the victim. In Nigerian healthcare settings, relational bullying may manifest when experienced nurses deliberately exclude new or younger nurses from social gatherings or collaborative work environments, harming the victim's reputation and career prospects (Craig & Pepler, 2007). These tactics cause emotional distress and undermine the victim's social standing, often leading to long-term social and psychological consequences.

Psychological Bullying

Psychological bullying, or emotional bullying, is less overt and often involves subtle tactics such as exclusion, gossip, and persistent undermining of the victim's confidence. It can be difficult to detect, as it frequently takes the form of passive-aggressive behavior or covert manipulation. In Nigerian healthcare contexts, psychological bullying may occur when colleagues or superiors undermine a nurse's professional competence through gossip or deliberate exclusion from decision-making processes, which can have devastating effects on the victim's confidence and mental health (Einarsen, et al., 2020). Research indicates that prolonged exposure to psychological bullying can lead to anxiety, depression, and post-traumatic stress disorder (PTSD) (Einarsen, et al., 2020).

Cyberbullying

With the rise of digital communication, workplace bullying can now extend into virtual environments through emails, messaging platforms, or social media. Cyberbullying adds a layer of anonymity, making it harder to trace and even more pervasive. In Nigerian healthcare environments, where digital communication tools are increasingly used to communicate instructions, reports, and feedback, cyberbullying may occur when a nurse is targeted with offensive or humiliating messages online, such as through work-related emails or social media platforms (Farley, et al., 2016). This form of bullying is particularly harmful because it can continue outside of work hours and escalate quickly, often involving many people, making it difficult for victims to escape.

Bullying is an escalating process during which the victim is systematically targeted and placed in a weaker position compared to the perpetrator. As noted by Einarsen, et al. (2011), bullying cannot be considered a one-off event or a conflict between two individuals of equal power. The features of bullying include frequency, persistency, hostility, and power imbalance.

The frequency and persistency of negative acts are critical in distinguishing bullying from isolated incidents or ordinary conflicts (Einarsen, et al., 2011; Francioli, 2014).

Hostility in bullying often manifests as negative acts from colleagues or superiors, where the victim finds it challenging to defend themselves due to the power imbalance between the perpetrator and the victim (Nielsen & Einarsen, 2012). The imbalance of power is not always hierarchical; it can stem from informal sources such as experience or knowledge (Cowie, et al., 2002). In Nigerian hospitals, the power imbalance often exists not only between supervisors and junior staff but also among colleagues, where more experienced nurses may target newer or less experienced staff members.

Another critical characteristic of bullying is its duration. Bullying is defined by its persistent and repeated nature, with negative acts occurring regularly over a period of time (Leymann, 1996). According to Einarsen, et al. (2011), bullying is considered ongoing if it continues for six months or more, though this duration may vary depending on the individual case. The unwanted nature of the behavior is central to its definition, with victims experiencing continuous insults, offensive remarks, and social exclusion, which can significantly impact their work performance and perception of the workplace (Einarsen & Raknes, 1997; Williams, 1997).

The intentional nature of bullying distinguishes it from other types of conflict. While misunderstandings or conflicts may arise unintentionally, bullying is always deliberate, with the perpetrator attempting to harm, belittle, or undermine the victim over time (Volk, et al., 2014). This intentionality is crucial in differentiating bullying from other forms of aggression that are not aimed at establishing dominance. The power imbalance is another feature of bullying, with perpetrators using physical strength, social status, or organizational position to exert control over the victim (Rigby, 2003; Smith, 2016). In Nigerian hospitals, this imbalance often takes the form of supervisors bullying subordinates or colleagues marginalizing others based on factors such as social capital or work position (Hutchinson, et al., 2019).

The long-term consequences of bullying are extensive and can affect not only the victim's immediate well-being but also their mental, emotional, and physical health. Victims often experience anxiety, depression, and reduced self-esteem, and in severe cases, may develop suicidal ideation (Lutgen-Sandvik, et al., 2007). Chronic exposure to bullying can result in lasting psychological trauma and organizational consequences such as increased absenteeism, lower job satisfaction, and higher turnover rates (Einarsen, et al., 2003). In healthcare settings, especially among nurses, bullying can contribute to emotional exhaustion, decreased job satisfaction, and turnover intentions (Hutchinson, et al., 2019). Understanding the various forms of bullying and their impact is essential for developing effective interventions to create safer, more supportive workplace environments.

Workplace bullying has increasingly become a topic of interest within organizational studies, particularly in high-stress professions like nursing. Defined broadly, workplace bullying involves repeated, long-term abusive behaviors towards employees, resulting in negative psychological, physical, and occupational outcomes (Einarsen, et al., 2011). In healthcare settings, where stress levels are often elevated due to the demanding nature of the work, nurses are particularly vulnerable to bullying. This is concerning not only because of the personal impact on victims but also due to the broader consequences for healthcare organizations, including reduced job satisfaction, high turnover rates, and diminished quality of care (Hutchinson, et al., 2010). In Nigeria, the healthcare system faces numerous challenges, including understaffing, inadequate resources, and organizational inefficiencies, all of which can exacerbate stressful working conditions and contribute to workplace bullying (Adebayo, et al., 2021).

Concept of Workplace Bullying

Definition of Workplace Bullying

Workplace bullying refers to the persistent, intentional mistreatment of an individual in a professional setting, resulting in physical, psychological, or emotional harm. It is characterized by repeated hostile actions that can take various forms, including verbal abuse, non-verbal hostility, and social isolation.

According to Einarsen et al. (2011), workplace bullying is defined as "harassing, offending, or socially excluding someone at work or negatively affecting their work tasks repeatedly and regularly, over a period of time, where the bullied individual finds it difficult to defend themselves." This definition emphasizes the repetitive nature of the behavior and the power imbalance that often makes it difficult for victims to resist or seek help. Similarly, the International Labour Organization (ILO) (2020) expands this definition to include behaviors like belittling, undermining, and spreading rumors, which can occur between peers or involve supervisors and subordinates.

Power Dynamics in the Workplace

A core characteristic of workplace bullying is the power imbalance between the perpetrator and the victim. The perpetrator typically holds more power whether through organizational authority, social influence, or other advantages allowing them to repeatedly target the victim without facing immediate consequences (Einarsen, et al., 2011). This power imbalance reinforces the victim's sense of helplessness and entrapment, contributing to long-term psychological damage (Leymann, 1996). In workplaces with authoritarian leadership styles, bullying behaviors are more likely to flourish, as these environments often normalize or even encourage power-based exploitation (Branch, Ramsay, & Barker, 2013).

In Nigerian healthcare settings, this power dynamic is particularly prevalent. Senior nurses or administrators often hold substantial authority over junior staff, and the hierarchical structure of Nigerian hospitals can exacerbate bullying. For example, junior nurses may be subjected to intimidation or belittling by more experienced nurses or supervisors. These dynamics not only create an atmosphere of fear but also discourage

victims from speaking out, as they feel powerless to challenge the authority of their seniors.

THEORETICAL FRAMEWORK

The Job Demand Control (JDC)

The Job Demand-Control (JDC), originally proposed by Robert Karasek in 1979, is one of the most widely recognized theories in occupational health psychology. It provides a framework for understanding the relationship between job demands, the level of control or decision-making latitude employees have, and the subsequent psychological outcomes, particularly job strain and stress-related behaviors. The Job Demand Control (JDC) model by Karasek (1979) emphasized the interaction between job demand and the degree of control employee have over their work tasks. Job demands refers to the physical and psychological pressures associated with the job such as the workload, time pressures and emotional labour while job control refers to the autonomy available to workers (Karasek 1979).

The model suggest that job strain is the highest when job demands are high and job control is low. However, when employees have a greater control, even higher demands do not necessarily result in strain (Karasek & Theorell1990). Exposure to workplace bullying may also be more pronounced among employees with low job control, because having poor influence on one's own work may be associated with negative work characteristics, like for instance role conflict (Notelaers, et al., 2010 cited in Francioli, 2014), having the potential to increase the individual risk of being subjected to negative behaviour.

The JDC model offers an explanatory framework for understanding the conditions under which workplace bullying may occur. High job demands, such as heavy workloads and emotional strain, create stressful environments that can escalate interpersonal conflicts, leading to bullying behaviors (Einarsen, et al., 2020). Research indicates that individuals in high-strain jobs are more likely to experience workplace bullying due to the imbalance between job demands and control (Hauge, et al., 2010). Moreover, the JDC model has been linked to job burnout, a common consequence of prolonged exposure to high job demands and low control (Bakker & Demerouti, 2007).

Burnout has been identified as a mediator in the relationship between high-strain jobs and workplace bullying, particularly in healthcare settings (Salin & Hoel, 2021). When nurses experience burnout due to overwhelming demands, they are more susceptible to bullying behaviors, both as victims and perpetrators. This model is particularly relevant in the healthcare sector, where nurses often face high demands combined with limited control over their working conditions, making them vulnerable to negative psychological and physiological outcomes (Geuens, et al., 2020).

According to Baillien, et al, (2011), workplace bullying represents a social behavioural strain signalling the presence of adverse psychosocial working conditions, among which also high job demands and low job control may play a significant role. In particular, these authors maintained that a significant association between the JDC model and a higher probability of being subjected to workplace bullying may occur because high job demands and low job control may impinge on employees' resources, and thus make them more likely to become an "easy target" of negative behaviours.

For instance, when confronted with high demands in the form of elevated time pressure, employees may more easily become targets in two ways: their need to raise efforts to keep up with the workload may eventually increase their stress and wear out their personal resources, while also restricting the time they have available to effectively manage emerging conflicts and invest in supportive relations at work (Francioli, 2014). The JDC model highlights the critical need for balance between job demands and control to safeguard nurses' well-being. In practice, enhancing job control through greater autonomy, participation in decision-making, and flexibility can mitigate the negative effects of high job demands, thereby reducing the risk of workplace bullying and improving overall job satisfaction (Laschinger & Fida, 2014).

A modified version of the JDC model, the Job Demand-Control-Support (JDCS) model, incorporates social support as a third dimension. According to this extended model, social support from supervisors and colleagues can buffer the negative impact of high demands and low control (Johnson & Hall, 1988). This is especially relevant in nursing, where collegial support plays a crucial role in reducing job strain and fostering a supportive work environment (Bakker, et al., 2021). Studies have shown that nurses who receive adequate support from their peers and supervisors are less likely to experience workplace bullying, as supportive environments help diffuse stress and conflict (Hauge, et al., 2011).

Recent research has expanded the JDC model by integrating it with other theories, such as the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2014). While the JDC model focuses on job demands and control, the JD-R model extends this by considering job resources, such as support, feedback, and opportunities for development, as critical factors that influence employee well-being and performance. In this extended framework, workplace bullying can be viewed as a depletion of resources, where the absence of adequate job control and support increases the likelihood of bullying behaviors, particularly in high-demand environments like healthcare (Nielsen et al., 2016). The insights provided by the JDC model underscore the importance of organizational interventions aimed at reducing job demands and increasing job control to prevent workplace bullying and promote nurse well-being. Implementing strategies such as job redesign, workload management, and empowerment initiatives can help create healthier work environments where nurses feel in control of their tasks, thereby reducing stress and preventing the onset of bullying behaviors (Van den Tooren & De Jonge, 2010).

Furthermore, fostering a culture of social support can act as a protective factor, buffering the negative effects of high demands on nurses' mental health and reducing the incidence of workplace bullying (Salin, 2021). This theory captures how imbalance between demands and control can lead to heightened stress, creating a fertile ground for bullying behaviours to thrive.

Empirical Review

Empirical studies have shown that nurses frequently experience bullying in their workplaces. Dasci and Çamaloğlu (2016) investigated the role of organizational silence in perpetuating workplace bullying in healthcare setting. The study entails a Cross-sectional study of 400 healthcare workers in Turkey, using a validated organizational silence scale and the Negative Acts Questionnaire (NAQ). The findings of the study indicate that Fear of retaliation and lack of grievance mechanisms were significant predictors of organizational silence. However, it was concluded that encouraging open communication and implementing reporting systems can help mitigate workplace bullying.

Rodriguez-Muñoz et al. (2015) explore the relationship between workplace bullying and depression in a longitudinal study. 350 healthcare workers, including nurses, participated in surveys over 12 months. Depression was assessed using the Beck Depression Inventory (BDI). The Findings shows that bullying significantly predicted depressive symptoms, including fatigue, sadness, and irritability. Participants exposed to chronic bullying reported higher depression scores. In Conclusion, Workplace bullying has long-term mental health impacts, emphasizing the need for early intervention and support mechanisms.

Hauge et al. (2010) examine the psychological effects of workplace bullying, with a focus on negative affectivity. A cross-sectional study of 500 healthcare employees in Norway using the Negative Acts Questionnaire (NAQ) and measures of negative affectivity. Findings of the study shows that victims of bullying experienced heightened negative emotions, including anger and frustration. Bullying indirectly influenced professional relationships and productivity through its impact on emotional states. The study concludes that addressing workplace bullying requires recognizing its emotional toll on employees and creating supportive environments.

Research by Johnson and Rea (2009) in the United States provides further evidence of the high prevalence of workplace bullying among nurses. Their study found that nurses who experienced bullying reported higher levels of job dissatisfaction, emotional exhaustion, and intent to leave their positions. The authors argued that workplace bullying in healthcare is a global phenomenon that requires urgent attention, given its potential to harm both staff well-being and patient care quality.

METHODOLOGY

Research Design

The study utilized *Ex-Post Facto* Design which is suitable for investigating variables where manipulation is not ethical and particularly appropriate for examining the influence of pre-existing conditions. The independent variables in the study was Organizational Silence. The Dependent variable was Workplace Bullying.

Area of Study

This study was carried out in six selected healthcare centers located in South-West Nigeria, specifically in Lagos, Oyo, and Osun States. These three states were selected using purposive sampling to capture the diversity of healthcare environments within the region. In -each state, one public hospital and one private hospital will be selected to ensure representation of diverse organizational contexts. The selection of hospitals was made to consider factors such as size, healthcare infrastructure, and geographical location. This approach ensures the study captures workplace dynamics across various institutional settings.

Population of the Study

The target population defines the units for which the results of the survey are intended to be generalized (Lyell, 2018). The population of this study comprises of nurses working in selected healthcare centers in three states across South-West Nigeria: Lagos, Oyo, and Osun States. These states were selected due to their diverse healthcare systems, which include a mix of public and private healthcare facilities and represent a significant portion of Nigeria's hospital workforce.

This focus on nurses is deliberate, as they are frontline healthcare providers who face high levels of work-related stress, making them particularly vulnerable to workplace bullying. Additionally, nurses play a vital role in healthcare delivery. The inclusion of both public and private hospitals ensures a comprehensive understanding of workplace bullying, as these settings often differ in organizational structures and workplace dynamics.

Sample Size and Sample Techniques

The study made use of random sampling techniques to select hospitals from the public and private hospitals in Lagos, Oyo and Osun States. This approach ensures that the sample is representative of the different types of healthcare centers. The sample size for this study was determined using the Taro Yamane's formula.

Clearly, the total sample size for the study, based on the Taro Yamane formula, is 622 nurses from selected public and private hospitals in Lagos, Oyo, and Osun states. This sample size will ensure that the study has adequate statistical power to detect significant effect. and ensures the generalizability of the findings across the target population of nurses in South-West Nigeria.

Method of Data Collection

A structured questionnaire was used to collect data from nurses in the selected states of Lagos, Oyo, and Osun. The questionnaire was designed to capture detailed information on workplace bullying and personality characteristics. The questionnaire was made up of three (3) sections, namely Section A (Socio-Demographic Characteristics), Section B measured organizational silence and Section C was (designed to assess Workplace Bullying. The copies of the questionnaire were administered in person to the selected nurses with the assistance of trained research assistants.

3.6 Research Instrument

The study utilized a structured questionnaire as the primary data collection instrument. A structured questionnaire is a quantitative data tool that allows respondents the opportunity to express their independent opinions on various elements of the study variables (Selara, 2016). To respond to the research questions and test the hypotheses, a specially designed questionnaire will be employed (Nwosu & Uffoh, 2015). The questionnaire

consists of nine (9) sections, each designed to measure different variables related to the study. The sections are:

Section A: Socio-Demographic Characteristics: This section gathered basic demographic information from respondents, including gender, age, marital status, educational status, job status and work experience.

Section D: This section uses the Organizational Silence Scale by Daşcı and Necati Çamaloğlu, (2016) to measure employees' silence behaviors within an organization. Organizational silence occurs when employees withhold concerns, opinions, or ideas, often due to fear of negative consequences or a lack of trust in the organization. The scale contains 35 items categorized into several types of silence, such as acquiescent silence, defensive silence, pro-social silence, fear-based silence, and silence due to indifference. Items are rated on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5).

Section C: This section measured workplace bullying using a 21-item Workplace Bullying Scale. The scale measures both person-related and work-related bullying behaviors, with responses rated on a five-point Likert scale (1 = Never to 5 = Daily). The scale has demonstrated good reliability, with Cronbach's alpha of 0.87 for the overall scale and 0.77 for the two subscales.

Administration of Research Instrument

Before the distribution of the research instruments, a briefing session was held with the supervisors or heads of departments of the selected healthcare centers to explain the objectives of the study, the importance of the nurses' participation, and to address any concerns regarding confidentiality and the use of data. This session will help ensure full cooperation and clear communication about the study's purpose and the ethical handling of data.

The questionnaires will then be distributed to the participants during their work shifts. Nurses will be given flexibility to complete the questionnaires at their convenience, minimizing any potential stress or time constraints that could affect their responses. By allowing nurses to complete the questionnaires during their shifts and at their own pace, we aim to improve the quality of the data collected while respecting the participants' time and workload.

Methods of Data Analysis

The study made of use both the descriptive and inferential statistics for data analysis. The descriptive statistics was used to provide some summary information on the data collected, particularly the personal information associated with the respondents of the study such as gender, age, marital status and work experience. The inferential statistics was adopted to test the stated hypotheses. Specifically, hypothesis one will be analyzed using multiple regression while hypothesis two to eight will be analyzed using regression. All the hypotheses will be tested at 5 percent level of significance ($\alpha = 0.05$). The Statistical Package for Social Sciences (SPSS) version 26 were used to run the data.

RESULT AND DISCUSSION

This chapter deals with the results of the study. It involved the descriptive analysis of the socio-demographic characteristics of the respondents and test of stated hypotheses using regression analysis.

4.1 Socio - Demographic Characteristics of the Respondents

Table 4.1

Distribution of Respondents by Demographic Factors

Characteristics	Variable	Frequency	Percentage(%)
Sex	Male	67	16.0
	Female	353	84.0
	Total	420	100.0
		Frequency	**Percentage(%)**
20-24yrs		**69**	**16.4**
Age Group 25-29yrs		**63**	**15.0**
30-39yrs		**101**	**24.0**
40-44yrs		**136**	**32.4**
45yrs and above		**51**	**12.1**
Total		**420**	**100.0**
		Frequency	**Percentage(%)**
Educational Qualification	OND/Diploma/NCE	113	15.8
	HND/First Degree	171	69.5
	Postgraduate Diploma	36	
	Masters Degree	100	10.7
	Total	420	100.0
		Frequency	**Percentage(%)**
Marital Status	Single	64	17.2
	Married	356	76.8
	Total	420	100.0
		Frequency	**Percentage(%)**
Religion	Christianity	188	44.8
	Islam	232	55.2
	Total	420	100
		Frequency	Percent
	0 - 4 years	58	13.8
Working Experience	5 - 9yrs	126	59.4
	10 – 14yrs	107	13.8
	15 – 19yrs	87	2.7
	20yrs and above	42	0.3
	Total	420	100

Authors' Field Survey (2025).

HYPOTHESIS TESTING

HYPOTHESIS ONE

Organizational silence will not significantly influence workplace bullying experience among nurses in hospital in South-West, Nigeria.The hypothesis was tested by Linear regression. The results are shown in tables 2 3 and 4

Table 2

A Summary Table of Linear Regression Showing Contributions of Organizational Silence to Workplace Bullying

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.463[a]	.215	.213	5.100

a. Predictors: (Constant), ORGANIZATIONAL SILENCE

The model summary table (Table 2) presents an R-squared (R^2) value of 0.215. This value indicates that the organizational silence variable showed a relatively moderate influence on workplace bullying among nurses in hospitals in South-west. The R-squared value of 0.215 suggests that the models collectively predicted approximately 22% of the variability observed in workplace bullying. This implies that around 22% of the variance in workplace bullying among nurses in hospitals in South-West Nigeria levels can be anticipated through organizational silence factor encompassed in the study's models.

Table 3

A Summary Table Showing of Linear Regression Showing the F ratio of the Predictive Influence of Organizational Silence on Workplace Bullying among Nurses in Hospitals in South-West Nigeria

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2971.665	1	2971.665	114.258	.000[b]
	Residual	10871.535	418	26.008		
	Total	13843.200	419			

a. Dependent Variable: WORKPLACE BULLYING
b. Predictors: (Constant), ORGANIZATIONAL SILENCE

The results displayed in Table 3 indicated a significant prediction of workplace bullying by the organizational silence variable. The F-statistic of F (1, 418) = 114.258, with a p-value less than 0.05, signifies that the overall regression model demonstrates a high level of statistical significance in terms of its goodness of fit. This is supported by the fact that the calculated F-statistic (Fcal) surpasses the critical F-value (Ftab).

Table 4

A Summary Table of Linear Regression Showing the Individual Contribution Organizational Silence to Workplace Bullying

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	42.326	2.582		16.391	.000
	ORGANIZATIONAL SILENCE	.232	.022	.463	10.689	.000

a. Dependent Variable: WORKPLACE BULLYING

Table 4. presents the individual contribution of the predictor variable. Specifically, organizational silence variable exhibited a moderate contribution with a Beta coefficient of. 463, accompanied by a p-value less than .05 and a t-value of 10.689. This contribution is statistically significant in relation to workplace bullying. Consequently, the null hypothesis is rejected while the alternative hypothesis is accepted, leading to the conclusion that work stress significantly influenced workplace bullying among nurses in hospitals in South-West Nigeria.

CONCLUSION AND RECOMMENDATIONS

Based on the results of the study, it is thereby concluded that:

- Work stresssignificantly influenced workplace bullying experience among nurses in hospital in South-West, Nigeria.

IMPLICATIONS AND RECOMMENDATIONS

A very effective strategy to address workplace bullying is generating its awareness. Existing literature supported that raising awareness about bullying is effective to escape from after effects(Salin,2013; Vartia & Leka, 2011). Therefore, information and attitude campaigns would help both managers and employees recognize bullying behavior and understand their consequences.

Secondly, periodically personality development training must also be provided to all employees servingatall levels which will help them to groom their personalities and especially for senior employees which will help them to better survive in this growing diverse environment.

Lastly, practitioners should help business institutions, while developing course content for business students to design a course based on bullying awareness and protection against bullying. Existing literature also supported the need for involving practitioners seeking inspiration to more developed disciplines to identify empirically evaluated intervention methods against bullying (Cassidy et al., 2019).

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